

**PREVALENCE OF INTESTINAL AMOEBIASIS AMONG PRIMARY SCHOOL PUPILS
IN EKITI STATE, NIGERIA**

¹Abolarin, Raphael Kayode, ²Ajibola, Adebayo Thomas, & ³Omodara, Anthony Mayowa

^{1,2}Department of Medical Laboratory Science, College of Health Technology, Ijero Ekiti, Ekiti State

³Department of Basic Medical Science, College of Health Technology, Ijero Ekiti, Ekiti State

Abstract

This research work had documented the prevalence of Intestinal Amoebiasis among primary school pupils in Ekiti state, Nigeria. Intestinal Amoebiasis, also known as Amoebiasis or Entamoebiasis, is an infection caused by any of the amoebas of the Entamoeba group. It is an infection of the intestines caused by the parasite – Entamoeba histolytica. It is an intestinal illness typically transmitted when someone eats or drink water that is contaminated with a microscopic parasite called Entamoeba histolytica. In areas of endemic infection, a variety of conditions like ignorance, poverty, over-crowding, inadequate and contaminated water supplies and poor sanitation favour direct faecal–oral transmission of amoebas from one person to another. It is responsible for approximately 70,000 deaths annually and fourth leading causes of deaths. Children and pregnant women are mostly vulnerable to the infections. One thousand, six hundred (1,600) pupils were examined for the presence of intestinal parasitic infections. The samples were examined macroscopically and microscopically for the colour, consistency, blood, mucous, pus and the trophozoites, flagellates larvae, ciliates respectively. All the samples collected were examined using formal ether concentration techniques and this was able to differentiate the species of Entamoeba histolytica from other species of amoebiasis. Respondents were also interviewed using questionnaires to gather data on the factors that could lead to high prevalence of Entamoeba histolytica among them. The prevalence of Entamoeba histolytica infection among the primary school pupils surveyed was 7.9%. It was also observed that 15% of the respondents drink water supplied through tap water, this could be attributed to the high prevalence of Entamoeba histolytica in Ikere-Ekiti compared with other Local Government Areas. The percentage prevalence of Entamoeba histolytica in Ekiti South Senatorial District was 8.5%, which is higher than the other two districts as a result of shortage of water supply to the district compared with other senatorial districts in Ekiti State. It was then observed that, there is no association between the age group and prevalence of Entamoeba histolytica infection among the school age children. Also, there is association between the gender (sex) of the school age children and prevalence of Entamoeba histolytica infection. The result shows that the prevalence of Entamoeba histolytica infection among school age children in Ekiti State is low. However, the state Government should improve on the monthly Environmental sanitation exercise for the total eradication of the infection.

Keywords: Prevalence, Intestinal, Amoebiasis, Primary School, Pupils.

Introduction

Intestinal Amoebiasis, also known as Amebiasis or Entamoebiasis, is an infection caused by any of the amoebas of the Entamoeba group (Farrar, *et al*, 2012). According to Peterson, *et al* (2011), Amebiasis is an infection of the intestines caused by the parasite Entamoeba histolytica. It is an intestinal illness that is typically transmitted when someone eats or drinks water that is contaminated with a microscopic parasite called *Entamoeba histolytica* (*E. histolytica*). The parasite is an amoeba, a single-celled organism. That is how the illness got its name – Amoebiasis. Heredia, *et al* (2012) confirmed that, Amebiasis is the infection of the human gastrointestinal tract by Entamoeba histolytica, a protozoan parasite that is capable of invading the intestinal mucosa and may spread to other organs, mainly the liver. Entamoeba dispar, an amoeba morphological similar to *Entamoeba histolytica* that also colonizes the human gut, has been recognized recently as a separate species with no invasive potential. Heredia *et al* (2012) stated further that, the acceptance of Entamoeba dispar as a distinct but closely related protozoan species has had profound implications for the epidemiology of Amoebiasis, since most asymptomatic infections found worldwide are now attributed to this non-invasive amoeba. Yakoob *et al* (2012) pointed out that, currently, there is no low-cost laboratory test available for the differentiation of *Entamoeba histolytica* from Entamoeba dispar infections.

Invasive Amoebiasis due to *Entamoeba histolytica* is more common in developing countries. In areas of endemic infection, a variety of conditions including ignorance, poverty, over-crowding, inadequate and contaminated water supplies, and poor sanitation favour direct faecal–oral transmission of amoebas from one person to another. Being responsible for approximately 70 thousand deaths annually, Mackey, *et. al.* (2011), Amebiasis is the fourth leading cause of death due to a protozoan infection after Malaria, Chagas' disease, and Leishmaniasis and the third cause of morbidity in this organism group after Malaria and Trichomoniasis, (Farrar *et al*, 2013).

Amoebiasis is present all over the world. About 480 million people are infected with *E. histolytica* and this results in the death of between 40,000 – 110,000 people every year (Beeching & Gill, 2014). *E. dispar* is more common in certain areas and symptomatic cases may be fewer than previously reported. The first case of Amoebiasis was documented in 1875 and in 1891, *E. histolytica* was identified resulting in the terms Amoebic dysentery and Amoebic liver abscess (Beeching & Gill, 2014). Further evidence from the Philippines in 1913 found that, upon ingesting cysts of *E. histolytica*, volunteers developed the disease. It has been known since 1903 that at least one specie of non-disease causing entamoeba exists, but it was first formally recognized by the World Health Organization in 1997 (Beeching & Gill, 2014). In addition to the

recognized *Entamoeba dispar*, evidence shows there is likely another specie of *Entamoeba mashkovskii* as well. The reason why these species have not been differentiated until recently may be because they look very similar (Farrar *et al.*, (2013).

The most dramatic incident in the USA was Chicago World Fair outbreak in 1933 caused by contaminated drinking water; defective plumbing permitted sewage to contaminate water. There were 1,000 cases (with 58 deaths). In 1998, there was an outbreak of Amoebiasis in the Republic of Georgia. Between 26th May and 3rd September, 1998, 177 cases were reported, including 71 cases of intestinal Amoebiasis and 106 probable cases of liver abscess (Bercu *et al.*, 2007).

Good sanitation practice, as well as responsible sewage disposal or treatments are necessary for the prevention of *Entamoeba histolytica* infection on an endemic level. *E. histolytica* cysts are usually resistant to chlorination, therefore sedimentation and filtration of water supplies are necessary to reduce the incidence of infection (Farrar *et al.*, 2013).

In Nigeria, Amoebiasis is prevalent and widely spread. There have been several reports from various parts of Nigeria, which recognized it as important health problems especially among young children. Several epidemiological studies have indicated a high prevalence of intestinal parasitic infections among Nigerian children (Agbolade *et al.*, 2004). Infants under a year old are rarely infected with Amoebiasis. The incidence gradually increases during childhood and usually reaches its highest incidence in young adults (Ajero *et al.*, 2008). Parasitic infection results in malnutrition, anaemia and retarded growth (Nwoke, 2004).

Most of the affected population stay and carry out their home/domestic affairs in a very poor environmental conditions (Heiman *et al.*, 2012). The high prevalence of *Entamoeba histolytica* infections is closely linked with poverty, poor personal hygiene, poor environmental hygiene, and poor health service providers having inadequate supply of drugs and lack adequate and proper awareness of the transmission mechanisms and life cycle patterns of these parasites. Children and pregnant women are mostly vulnerable to the infections (Peterson *et al.*, 2011). Heredia *et al.* (2012) pointed out that, school children, in particular, are good targets for mass treatment programme against intestinal worms because they have the heaviest infection. Treating children has been shown to reduce transmission to untreated members of the community. Despite the high prevalence of Amoebiasis in various parts of Nigeria, there is no recent research on the prevalence of Amoebiasis in school age children, in Ekiti State. It is in view of this that, this study was carried out in Ekiti State, Nigeria to determine the prevalence of Amoebiasis among school age children.

Statement of the Problem

Amoebiasis is one of the leading parasitic cause of deaths worldwide, surpassed only by Malaria and Schistosomiasis (Ferrar *et al*; 2013). On a global basis, Amoebiasis affects approximately 50 million persons each year, resulting in nearly 100,000 deaths. Those that are commonly vulnerable to these infections include school age children and pregnant women. Some of the factors that lead to the high incidence of Amoebiasis include poverty, poor personal hygiene, poor domestic hygiene, poor environmental hygiene, overcrowding, ignorance and poor health service providers having inadequate supply of drugs and lack adequate and proper awareness of the transmission mechanisms and life cycle patterns of these parasites.

Individuals, communities and governments have their own share of blame on the high prevalence of Amoebiasis among school age children. Children are the future leaders of any country and the need arises to guard their health conditions jealously. Individuals, communities, and governments need to work jointly in order to eradicate Amoebiasis in our environments. This is to sieve children from un-timely deaths. Hence, the need to examine the prevalence of Amoebiasis among school age children.

Objectives of the Study

The objective of this study was to determine the prevalence of Amoebiasis among school age children. The objectives of this study are to:

1. determine the prevalence of Amoebiasis among school children in Ekiti State aged 1 – 14 years.

Research Question

The following research question was raised for this study

1. What is the prevalence of Amoebiasis among school children in Ekiti State aged 1 – 14 years?

Literature Review

Mackey *et al* (2011) defined gastro-intestinal Amoebiasis as an infection of the large intestine caused by microscopic one-celled parasites commonly known as amoebas (*Entamoeba histolytica*). These parasites live in the large intestine, so they travel in the faeces of infected people and can contaminate water supplies in places where sanitation is poor. The parasite can contaminate fruits and vegetables grown in areas where human faeces are used as fertilizers. They can be transferred on the dirty hands of the infected people who do not wash their hands. According to Bercu, *et al* (2007), Amoebiasis is an infection caused by the amoeba *Entamoeba histolytica*. They stated further

that, Amoebiasis is sometimes incorrectly used to refer to infection with other amoebae, but strictly speaking, it should be reserved for *Entamoeba histolytica* infection.

Most symptomatic disease is caused by *Entamoeba histolytica*, *Entamoeba dispar* is generally considered non-pathogenic. Reported infections with *Entamoeba moshkovskii* are becoming more frequent; its pathogenic potential remains unclear (Heredia *et al* 2012). Symptoms are most common upon infection by *Entamoeba histolytica*. Theoretically, the ingestion of one viable cyst can cause an infection. Most infection is asymptomatic; clinical manifestations include amoebic dysentery and extraintestinal disease. According to Beeching & Gill (2014), Amoebiasis can present with no, mild, or severe symptoms. Symptoms may include abdominal pain, mild diarrhea, bloody diarrhea or severe colitis with tissue death and perforation. These last complications may cause peritonitis. People affected may develop anaemia due to loss of blood.

Lozano *et al* (2010) confirmed that *Entamoeba histolytica* infection is associated with malnutrition and stunted growth. Invasion of the intestinal lining causes amoebic bloody diarrhea or amoebic colitis. If the parasite reaches the blood stream, it can spread through the body, most frequently, ending up in the liver where it causes amoebic liver abscesses. Liver abscesses can occur without previous diarrhea (Beeching & Gill, 2014). They stated further that cysts of *Entamoeba* can survive for up to a month in soil or for up to 45 minutes under fingernails.

Modes of Transmission of Intestinal Amoebiasis

The incubation period of *Entamoeba histolytica* is between 7 – 28 days. Amoebiasis is usually transmitted by the faecal–oral route, but it can also be transmitted indirectly through contact with dirty hands or objects as well as by anal–oral contact. Transmission is by ingestion of contaminated food or water and can spread through flies and food-handlers (Shimokawa *et al*, 2012). Infection is spread through ingestion of the cyst form of the parasite, a semi-dormant and hardy structure found in faeces. Any non-encysted amoebae, or trophozoites die quickly after leaving the body but may also be present in stool; these are rarely the source of new infections (Yakoob *et al*, 2012).

Since Amoebiasis is transmitted through contaminated food and water, it is often endemic in regions of the world with limited modern sanitation systems (Lejeune *et al*, 2009). Transmission can also occur through exposure to faecal matter during sexual contact in which case not only cysts,

but also trophozoites could prove infective. Homosexual individuals are at the risk in this case. (Peterson *et al*, 2011).

Causes of Intestinal Amoebiasis

Several protozoan species in the genus *Entamoeba* colonize humans, but not all of them are associated with intestinal and extraintestinal infections. The other species are important because they may be confused with *Entamoeba histolytica* in diagnostic investigations.

The risk predisposing factors include: poor personal hygiene practice, lack of toilet facilities and portable water supply, eating of raw vegetables and unwashed/unpeeled fruits, poor sanitation, poor solid waste and sewage disposal (Magidan *et al*; 2003).

Risk Factors for Severe Amoebiasis

1. Alcoholism.
2. Cancer.
3. Malnutrition.
4. Immuno-compromised person.
5. Pregnancy.
6. Recent travel to tropical region.
7. Use of corticosteroid medication to suppress the immune system (Yakoob *et al*, 2012).

Signs and Symptoms of Intestinal Amoebiasis

Most people with this infection do not have symptoms, if symptoms occur, they are seen 7 to 28 days after being exposed to the parasite.

Mild Symptoms:

1. Abdominal cramps.
2. Diarrhoea – passage of 3 to 8 semi-formed stools per day, or passage of soft stools with mucus and occasional blood.
3. Fatigue.
4. Excessive gas.
5. Rectal pain while having a bowel movement (tenesmus).
6. Unintentional weight loss.

Severe Symptoms:

1. Abdominal tenderness.
2. Bloody stools, including passage of liquid stools with streaks of blood, passage of 10 to 20

stools per day.

3. Fever.
4. Vomiting (Beeching & Gill, 2014).

Microscopical Examination and Diagnosis of Intestinal Amoebiasis

The health care provider will perform a physical examination. Patient will be asked about the medical history, especially of recent travel to endemic regions. Examination of the abdomen may show liver enlargement or tenderness in the abdomen. Tests that may be ordered include: blood test for Amoebiasis (Leukocytosis); examination of the inside of the lower large bowel (Sigmoidoscopy); stool test (Cyst, white and yellow pus with plenty amoeba); and, Microscope examination of stool samples, usually with multiple samples over several days (Beeching & Gill, 2014).

Complications of Intestinal Amoebiasis

1. Amebic liver abscess:
 - * Intrathoracic or intraperitoneal rupture with or without secondary bacteria infection.
 - * Direct extension to pleura or pericardium.
2. Amebic colitis:
 - * Fulminant or necrotizing colitis.
 - * Toxic megacolon.
 - * Anaemia
3. Brain abscess.
4. Medication side effects, including nausea.

Prevention and Control of Intestinal Amoebiasis

There is no vaccine to prevent Amoebiasis.

1. When travelling to countries where sanitation is poor, drink purified or boiled water.
2. Do not eat unpeeled fruits.
3. Avoid eating street foods especially in public places where others are sharing sauces in one container.
4. Boil water or treat with chlorine or iodine tablets.
5. Avoid raw vegetables when in endemic areas, as they may have been fertilized using human faeces.
6. Avoid sharing towels or face washers.

7. Wash hands thoroughly with soap and hot running water for at least 10 seconds after using the toilets or changing a baby's diaper, and before handling food.
8. Clean bathrooms and toilets often; pay particular attention to toilet seats and taps.
9. Cover foods properly to prevent flies.
10. Maintain good personal hygiene.
11. Provisions of good toilet facilities and portable water supplies.
12. Maintain good sanitary practice, as well as responsible sewage disposal or treatment methods.
(Magidan *et al*; 2003).

Methodology

The research design adopted for this study is experimental research design. An experiment is a scientific investigation in which observations are made and data are collected according to a well-defined scientific procedure. Experimental research truly establishes cause-effect relationship. Subjects to be studied are randomly divided into experimental and control groups, treatments are assigned to the various groups, and finally treatment effects on the subjects are observed or estimated. The treatment, which is manipulated and believed to be the cause, is referred to as independent variable, while the effect observed on the subjects is dependent variable (Olanrewaju, (2014). The population of study are the school age children selected in public primary schools in the sixteen (16) local government areas of Ekiti State. Sixteen (16) public primary schools were randomly selected for the research work (i.e. one in each Local Government Area) using simple random sampling technique. Also, one hundred (100) pupils were randomly selected in each selected public primary schools using simple random sampling technique. This gives a total of 1,600 patients to be used as samples of the study. One thousand six hundred (1,600) copies of questionnaire were randomly distributed to the pupils in the selected public primary schools in Ekiti State using simple random sampling technique. Also, samples were collected from 1,600 pupils from selected public primary schools in Ekiti State (i.e. 100 pupils from each school). Data collected based on macroscopy and microscopy tests were analyzed using statistical methods of frequency distribution, simple percentages and Chi – square test (i.e. test of association).

Results

The finding of this study revealed that out of 1,600 primary school pupils sampled in Ekiti State, 126 (7.9%) were found to be positive for *Entamoeba histolytica* infection (Table 4). The prevalence recorded by individual Local Government Areas were as follows: Ikere 12%, Ado-Ekiti 10%, Ekiti

South–West 10%, Irepodun/Ifelodun 10%, Ise/Orun 10%, Emure 9%, Ido/Osi 9%, Moba 9%, Ekiti West 8%, Ilejemeje 8%, Oye 8%, Ekiti East 6%, Ijero 5%, Ikole 5%, Gbonyin 4% and Efon-Alaaye 3% (Table 1).

Out of 500 primary school pupils sampled in Ekiti North Senatorial District of Ekiti State, 39 (7.8%) were found to be positive for *Entamoeba histolytica* infection (Table 5). The prevalence recorded by individual Local Government Areas within the Senatorial District were as follows: Ido/Osi 9%, Moba 9%, Ilejemeje 8%, Oye 8% and Ikole 5% (Table 2).

Out of 500 primary school pupils sampled in Ekiti Central Senatorial District of Ekiti State, 36 (7.2%) were found to be positive for *Entamoeba histolytica* infection (Table 6). The prevalence recorded by individual Local Government Areas within the Senatorial District were as follows: Ado–Ekiti 10%, Irepodun/Ifelodun 10%, Ekiti West 8%, Ijero 5% and Efon Alaaye 3% (Table 3).

Also, out of 600 primary school pupils sampled in Ekiti South Senatorial District of Ekiti State, 51 (8.5%) were found to be positive for *Entamoeba histolytica* infection (Table 7). The prevalence recorded by individual Local Government Areas within the Senatorial District were as follows: Ikere 12%, Ekiti South – West 10%, Ise/Orun 10%, Emure 9%, Ekiti East 6% and Gbonyin 4% (Table 4).

Out of 794 males, 60 (7.6%) were found to be positive for *Entamoeba histolytica* infection while in 806 females, 66 (8.2%) were also found to be positive (Table 5). Also, out of 510 primary school pupils sampled among ages 1 – 5 years, 40 (7.8%) were found to be positive for *Entamoeba histolytica* infection; among ages 6 – 10 years, out of 794 sampled, 60 (7.6%) were found to be positive while in age group 11 – 14 years, out of 296 sampled, 26 (8.8%) were found to be positive (Table 6).

Table 1: Percentage Prevalence of *Entamoeba Histolytica* Infection among Primary School Pupils of Ages 1 – 14 Years in Ekiti State, Nigeria.

S/NO	LGAs	Number Examined	Number Positive	Percentage Prevalence (%)
1.	Ado-Ekiti	100	10	10.0
2.	Efon-Alaaye	100	3	3.0
3.	Ekiti West	100	6	6.0
4.	Ekiti South West	100	10	10.0
5.	Ekiti West	100	8	8.0
6.	Emure	100	9	9.0
7.	Gbonyin	100	4	4.0
8.	Ido/Osi	100	9	9.0
9.	Ijero	100	5	5.0

10	Ikere	100	12	12.0
11.	Ikole	100	5	5.0
12.	Ilejemeje	100	8	8.0
13.	Irepodun/Ifelodun	100	10	10.0
14.	Ise/Orun	100	10	10.0
15.	Moba	100	9	9.0
16.	Oye	100	8	8.0
	TOTAL	1,600	126	7.9

Table 2: Percentage Prevalence of *Entamoeba Histolytica* Infection among the Primary School Pupils in Ekiti North Senatorial District of Ekiti State, Nigeria.

S/No	LGAS	Number Examined	Number Positive	Percentage Prevalence (%)
1.	Ido/Osi	100	9	9.0
2.	Ikole	100	5	5.0
3.	Ilejemeje	100	8	8.0
4.	Moba	100	9	9.0
5.	Oye	100	8	8.0
	TOTAL	500	39	7.8

Table 3: Percentage Prevalence of *Entamoeba Histolytica* Infection among the Primary School Pupils in Ekiti Central Senatorial District of Ekiti State, Nigeria.

S/NO	LGAs	Number Examined	Total Number Positive	Percentage Prevalence (%)
1.	Ado-Ekiti	100	10	10.0
2.	Efon-Alaaye	100	3	3.0
3.	Ekiti West	100	8	8.0
4.	Ijero	100	5	5.0
5.	Irepodun/Ifelodun	100	10	10.0
	TOTAL	500	36	7.2

Table 4: Percentage Prevalence of *Entamoeba Histolytica* Infection among the Primary School Pupils in Ekiti South Senatorial District of Ekiti State, Nigeria.

S/NO	LGAs	Number Examined	Number Positive	Percentage Prevalence (%)
1.	Ekiti East	100	6	6.0
2.	Ekiti South West	100	10	10.0
3.	Emure	100	9	9.0

4.	Gbonyin	100	4	4.0
5.	Ikere	100	12	12.0
6.	Ise/Orun	100	10	10.0
	TOTAL	600	51	8.5

Table 5: Percentage Prevalence of *Entamoeba Histolytica* Infection by Sex among Primary School Pupils in Ekiti State, Nigeria.

Sex	Number examined	Number positive	Percentage prevalence (%)
Male	794	60	7.6
Female	806	66	8.2
TOTAL	1,600	126	7.9

Table 6: Percentage Prevalence of *Entamoeba Histolytica* Infection by Age among Primary School Pupils in Ekiti State, Nigeria.

AGE (YEARS)	NUMBER EXAMINED	NUMBER POSITIVE	PERCENTAGE PREVALENCE (%)
1 – 5	510	40	7.8
6 – 10	794	60	7.6
11 – 14	296	26	8.8
TOTAL	1,600	126	7.9

Discussion

Generally, Amoebic dysentery, as caused by *Entamoeba histolytica*, is a common disease in developing countries, with school age children carrying the heaviest burden of the associated morbidity (Mematian et al., (2012); Oninla et al. (2007)). It also leads to extra-intestinal infections, even though, there are luminal amoebiasis, as found in symptomless carriers, the invasive type is of medical concern (Adam & Macloed, 1997).

Various prevalence rates of *Entamoeba histolytica* infection had been published by different researchers. The rates vary for different locations, states, local government areas, and the types of patients surveyed and the source of the survey materials. While prevalence rate as low as 1% has been recorded (Pugh, et al, 1981), rates as high as 35 – 41% have also been published (Reynoldson, et al, 1997). In Nigeria, rates of 1 and 13.7% have also been established (Pugh et al, 1981); Alaribe, et al, (1994). A total prevalence rate of 16% was recorded among primary school children of ages 0 – 14 years in Ukwa West LGA, Abia State, Southeast, Nigeria (Amaechi, et al (2014). This was

consistent with the report of Ibrahim, (2008) in Kano, Northern Nigeria and Aribodor et al. (2012) in Anambra State, Southeast, Nigeria respectively. The prevalence rate of *Entamoeba histolytica* infection among infants and junior secondary school children in Degema General Hospital was found to be 11% (Nyenke, et al, 2008). Also, a total prevalence rate of 18.6% was recorded amongst primary school children in five selected communities in Gwagwalada Area Council, FCT, Abuja, Nigeria (Gimba et al., 2014). The prevalence rate of *Entamoeba histolytica* among primary school children in this study was found to be 7.9%. This result is consistent with the report of Ekiti State Ministry of Health Surveillance on Intestinal Amoebiasis among primary school pupils in 2015 (unpublished). The prevalence of *E. histolytica* recorded in this study is quite higher than those obtained by some other researchers. A prevalence of 5.3% among school age children was recorded in India (Nduka, et al., 2006).

In Ishiagor area of Abia State, Nigeria, the prevalence rate of 3.1% was recorded among children (Nyenke, et al., 2008). Also, there are areas in which prevalence rates recorded by other researchers were higher than for this study. In a study carried out on prevalence of Intestinal Amoebiasis in School Age Children in Lafia, Nasarawa State, Nigeria, the prevalence rate was found to be 26.7% (Reuben, et al 2013) while it was 11% in a study carried out among children in Port-Harcourt, Rivers State, Nigeria (Obiukwu, et al., 2008). The prevalence rates of Intestinal Amoebiasis among the primary school pupils surveyed in Ekiti State ranges between 3 – 12%. The children from the Local Government Areas who were hard-hit (i.e. above the mean value of 7.9%) include: Ado-Ekiti, Ekiti South West, Ekiti West, Emure, Ido/Osi, Ikere, Ilejemeje, Irepodun/ Ifelodun, Ise/Orun, Moba and Oye. These are eleven (11) out of sixteen (16) Local Government Areas.

Conclusion

Based on the results of analysis carried out on the outcomes of this study, it was concluded that, the prevalence of *Entamoeba histolytica* infection among school age children in Ekiti State is low. Generally, the study has indicated a high prevalence of *Ascaris lumbricoides* among the children. The prevalence of *Entamoeba histolytica* infection among the primary school pupils in Ekiti State may be closely linked with poverty, ignorance, poor personal hygiene, poor environmental hygiene, over-crowding, poor sewage disposal, inadequate and poor water supply, poor health service providers, among others. This study has provided information on the prevalence rate of parasitic infection which is gradually fading out, also government should brace up in the area of providing portable drinking water to the rural dwellers.

Recommendations

The following recommendations were made:

To The Government:

1. Government should make provisions for more tap water and bore-hole water supply in the areas.
2. Government should build public toilets at strategic places like motor-parks, bus stops, markets, etc.
3. Basic Health Centres should be built in schools to cater for minor cases of illnesses.
4. Government should make provision for refuse dumping sites in every community.
5. Large waste bins should be kept in strategic places for the community to dump their refuse before final disposal into the refuse dumping sites by the Waste Management Board.

To The School Authorities:

1. The school authorities should make sure that, the school environment is always neat and tidy.
2. The school authorities should make provisions for portable water supply and toilet facilities in schools.
3. The school authorities should make sure that school toilets are decently used, washed and kept neat always.

To The Community:

1. Landlords and landladies are advised to always make provisions for adequate water supply and toilet facilities in their houses, so as to discourage indiscriminate defecation in the environment.
2. Parents should endeavour to always de-worm their children twice in a year (i.e. every 6 months).
3. Individual households should always treat and boil their water before use or drinking.
4. Fruits like guava, apple, mangoes should always be washed with clean water before eating.
5. Hands should always be washed before and after meals, and also after going to toilets.
6. Every household should improve on their level of personal, domestic and environmental hygiene practices.

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