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## **KNOWLEDGE OF THE PREDISPOSING FACTORS OF ASCARIASIS DISEASE AMONG PUBLIC PRIMARY SCHOOL TEACHERS IN KWARA STATE**

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### **Abstract**

*Ascariasis (roundworm) is an important health issue that is affecting people mostly in less developed countries which It has been associated with causing stunting growth, body weakness, nutritional disturbances, morbidity, mortality and low educational achievement among school children and even in adults. The objectives of the study were to investigate whether poor knowledge of personal hygiene and food hygiene were predisposing factors of ascariasis among public primary school teachers in Kwara State. The study adopted a descriptive research design of the survey type. The population of the study comprised of all the public primary school teachers in Kwara State (11,963). Multistage sampling techniques of cluster, proportionate, purposive, proportionate, and simple random sampling techniques were used to select 470 public primary schools teachers in Kwara state as a sample for the study. The*

Research instrument adopted for the study was researchers structured questionnaire which had been validated by three experts in the Department of Health Promotion and Environmental Health Education, University of Ilorin to ensure both face and content validity. Reliability of the instrument used for the study was established through a split-half method. Twenty (20) copies of the questionnaire administered on twenty public primary school teachers outside the study area and their responses analysed using Cronbach alpha. The correlation coefficient of 0.71r was obtained. The result of the reliability indicated that the instrument was reliable. The result of data collected analysed using frequency counts and percentages. The finding of the study revealed that primary school teachers in the study area know that poor personal hygiene and poor food hygiene are a predisposing factor for ascariasis. It was recommended that the Kwara State Universal Basic Education (KWSUBE) should carry out an educative programme that will enlight both primary school pupils and teachers on the need for them to always wash their hands with soap and water after visit toilet and before handling or eating food to protect them against ascariasis.

**Keywords:** Knowledge, predisposing factor, ascariasis, disease, primary school teachers.

## **Introduction**

The disease can be defined as a medical condition that causes pain, distress and discomfort on the affected person and it usually associated with specific signs and symptoms. Hygiene is the practice of keeping yourself and your surroundings clean to prevent illness or the spread of diseases. Poor food hygiene and poor personal hygiene can lead to communicable diseases which may cause a digestive problem, food borne diseases or death. The human body can provide places for diseases causing germs and parasites to grow and multiply. These places include the skin and in and around the opening to the body. It is less likely that germs and parasites will get inside the body if people have good personal and food hygiene habits. Ascariasis is a disease caused by the parasitic roundworm. Infections have no symptoms in more than 85% of cases, especially if the number of worms is small. Symptoms increase with the number of worms present and may include shortness of breath and fever in the beginning of the disease.

Ascariasis is one of the commonest and most prevalent parasites infecting humans in the world today. Ascariasis is an intestinal infection caused by the parasitic worm called *Ascaris lumbricoides* and is part of a family of parasites known as the soil-transmitted helminths. *Ascaris*, hookworm, and whipworm are known as soil-transmitted helminths (parasitic worms). Together, they account for a major burden of disease worldwide. Human beings become infected with ascariasis by ingesting infective eggs in the contaminated food, water or from hands that have become faecally contaminated. Ascariasis is among common neglected tropical disease (NTD) worldwide which continues to cause significant morbidity in Nigeria and other less developed tropical and sub-tropical countries. It is particularly common in areas of inadequate sanitation where untreated humans faeces are used for fertilization or as fertilizers (Chesbrough, 2010).

Major predisposing factors of this disease include poverty, poor environmental sanitation, personal hygiene, deficiencies in sanitary facilities, lack of potable drinking water, improper disposal of human faeces, substandard housing and lack of education (Bragagnoli & Nascimento-Silva, 2013). Oyibo and Uneke (2011), reported that unwholesome practice like the habit of defecating inside polythene bags or paper materials and throwing such human faeces on major roads, streets, highways, gutters, flowing streams, open environment or rivers sometimes exhibited by many people in different parts of Nigeria are important factors that sustain transmission. Such behaviour encourages flies to transfer cysts, larvae and eggs of intestinal parasitic infections onto food items displayed along roads thus posing a serious threat to consumers.

Anuar, Salleh and Moktar (2013), stated that ascariasis is associated with unhygienic personal practices such as not washing hands before eating and after playing with soil, not washing vegetables/fruits before consumption, drinking untreated water and not cutting nails periodically were identified as significant predictors of *Ascaris lumbricoides* infections. Odu, Okonko and Erhi (2011), added that the habit of washing vegetables and fruits with unclear water before eating was found to be a risk factor. In another report, WHO (2011) also observed that these vegetables are normally cultivated in open farms where people defecate and where untreated refuse are also used as manure. These coupled with the absence of clean potable water to wash the vegetables and fruits accounted for the ascariasis prevalence.

In studies conducted by Adeyeba and Akinlabi, (2010), on the knowledge of the causes and attitude toward management of ascariasis infections among children in the southwestern region of Nigeria, the result indicated that 50 (14.5%) out of 400 of the respondents perceived raw meat as the cause of *Ascaris Lumbricoides*, only 32 (9.3%) of the respondents stated that avoiding raw meat is the way to prevent the disease, and among the individuals who responded raw meat to be the source of ascariasis and 35% of the respondents perceived eating bad food, contaminated water, dirty hand (not washing hand) as a predisposing factor of ascariasis.

Knowledge of ascariasis varies greatly among different people. Most adults and children especially the school-aged are either not aware or do not care about the consequences of poor sanitation in their environments (Anuar, Salleh and Moktar, 2013). Poor hygiene habits such as not cleaning with soap and water after using the toilets also expose both children and adults to infections. Some individuals also do not seek treatment against helminths infection while others claim that intestinal worms are useful components of food digestion (Starr & Montgomery, 2011). Ignorance, illiteracy and poverty have been shown to create favourable conditions upon which soil-transmitted helminths thrive. Lack of awareness on the mode of transmission of these diseases sustains poor management strategies in most endemic communities. Therefore, the study intends to investigate the knowledge of the predisposing factor of ascariasis among public primary school teachers in Kwara State.

### **Statement of the Problem**

The researchers observed that majority of public primary schools in the study area have poor environmental, personal and food hygiene which favours the transmission of Ascariasis infection. The researcher equally testifies that many communities in Kwara State do not have access to portable drinking water and rely on rivers and streams which may be infected with eggs of *Ascaris lumbricoides* for drinking and domestic activities. The researchers' also observed that poor sanitation practices among residents in the study area where some people found to dispose of their liquid waste to flowing water which serves as a source of water for the community. The practice exposes the residents in the study area to infectious diseases which include worm infestation such as ascariasis that cause a problem to the health of people in the study area.

Intestinal parasitic infection is the cause of common health problems in tropical countries. Younger children are predisposed to heavy infections with intestinal parasites since their immune systems are not yet fully developed, and they also habitually play in faecal contaminated soil. This infection has been found to profoundly cause of abdominal pain, acute pancreatitis, obstructive jaundice and worm emesis among teachers (Hagel & Giusti, 2010). Several factors like climatic conditions, poor sanitation, unsafe drinking water, and lack of toilet facilities are the main causes of intestinal parasites in the tropical and sub-tropical countries including Nigeria. Babatunde (2013), submitted that the predominant source of water in Kwara State is a borehole, owned mostly by individuals, while others depend on locally dug wells. Most dug wells dried during the dry season (between November and March) then some villages use streams/ rivers as sources of their domestic water supply which serve as a vehicle for the transmission of *Ascaris lumbricoides* infections.

Although a lot of work had been done on the prevalence of *Ascaris lumbricoides* infections among primary school children in most parts of Nigeria. The reviewed literature shows that many studies have not been done on knowledge of the causes of *Ascaris lumbricoides*, it is on this premise that the researcher intends to find out knowledge of the predisposing factor of ascariasis among public primary school teachers in Kwara State.

### Research Questions

The following research questions were answered:

1. Will public primary schools teachers know about poor personal hygiene as a predisposing factor of ascariasis disease in Kwara State?
2. Will public primary schools teachers know about poor food hygiene as a predisposing factor of ascariasis disease in Kwara State?

### Methodology

The descriptive research design of survey type was used for the study. The population of the study comprised of all the public primary school teachers in Kwara State. A multistage sampling technique was used to select the respondents participated in the study. At stage one, the Cluster sampling technique was used to group the State into the existing three constitutionally recognized senatorial districts; such as Kwara South, Kwara North and Kwara

Central senatorial district. Stage two, Proportionate Sampling technique was used to select 35% of the local government in each of the Senatorial districts in Kwara State. The local government selected from Kwara South were Oyun, Offa and Irepodun, Kwara North were Edu and Moro, Kwara Central were Ilorin East and Ilorin south. Stage three, purposive sampling technique was used to select five (5) public primary schools from each of the Local Government Area selected for the study which had the highest population of teachers. A total of thirty (35) public primary schools were selected for the study. Stage four, proportionate sampling technique was used to select 60 % of the teachers in each of the selected schools. The number of respondents participated in the study from each of the selected local government were as follows: Oyun 60, Offa 70, Irepodun 70, Edu 50, Moro 65, Ilorin East 75 and Ilorin South 80. Stage five, simple random sampling procedure was used to select respondents participated in the study based on 60 % of teachers from each of the selected school and four hundred and seventy (470) teachers participated in the study.

The instrument used for data collection for the study was researchers structure questionnaire that had been validated by three experts from Department of Health Promotion and Environmental Health Education, University of Ilorin to ensure both face and content validity. A split-half method was used to establish the reliability of the instrument. Twenty (20) copies of the questionnaire were administered on twenty public primary school teachers from the school that was not part of primary school selected for the study. Cronbach alpha was used to analyse the result of the split-half method, the correlation coefficient of 0.71r was obtained which indicated the instrument was reliable. Frequency counts and percentages were used to analyse the result of data collected from the study.

### **Results and Discussion of Findings**

**Research Question 1:** Will public primary school teachers know about poor personal hygiene as a predisposing factor of ascariasis disease?

**Table 1: Public primary school teachers knowledge of poor personal hygiene as a predisposing factor of ascariasis disease**

| S/N | Item                                                                                    | Yes        | No         |
|-----|-----------------------------------------------------------------------------------------|------------|------------|
| 1.  | The habit of not washing hand after defecation is a disposing factor of ascariasis      | 330(70.2%) | 140(29.7%) |
| 2.  | Using leaves for clean-up after defecation is a predisposing factor of ascariasis       | 318(67.6%) | 152(32.3%) |
| 3.  | Using paper for clean-up after defecation is a predisposing factor of ascariasis        | 275(58.5%) | 195(41.5%) |
| 4.  | Using tissue paper for clean-up after defecation is a predisposing factor of ascariasis | 273(58.1%) | 197(41.9%) |
| 5.  | The habit of not cutting nail periodically is a predisposing factor of ascariasis       | 325(69.1%) | 145(30.9%) |

Table 1 shows that 70.2% of respondents agreed that habit of not washing hand after visit toilet is a disposing factor of ascariasis, 67.6% of respondents said that using leaves for clean- up after defecation is a predisposing factor for ascariasis, 58.5% of respondents reported that using paper for clean-up after defecation is a predisposing factor of ascariasis, 58.1% respondents said that using tissue paper for clean-up after defecation is a predisposing factor for ascariasis and lastly, 69.1% of the respondents agreed that habit of not cutting nail periodically is a predisposing factor of ascariasis.

**Research Question 2:** Will public primary school teachers know about poor food hygiene as a predisposing factor of ascariasis disease?

**Table 2 Public primary school teacher's knowledge of poor food hygiene as a predisposing factor of ascariasis disease**

| S/N | Items                                                                                    | Yes        | No         |
|-----|------------------------------------------------------------------------------------------|------------|------------|
| 1.  | The habit of not washing vegetable before cooking is a predisposing factor of ascariasis | 358(76%)   | 112(24%)   |
| 2.  | Exposing food to wind after cooking is a predisposing factor of ascariasis               | 388(82.5%) | 82(17.4%)  |
| 3.  | Keeping vegetable on ground could cause contamination which may lead to ascariasis       | 397(84.5%) | 73(15.5%)  |
| 4.  | Eating unwashed fruit is a predisposing factor of ascariasis                             | 334(71.1%) | 136(28.9%) |
| 5.  | Drying dishes and utensils with a dirty cloth is a predisposing factor of ascariasis     | 332(70.6%) | 138(29.4%) |

Table 2 shows that 76% of the respondents agreed that not washing vegetable before cooking can lead to ascariasis, 82.5% of respondents agreed that exposing food to wind after cooking can result to ascariasis, 84.5% of respondents reported that Keeping vegetables on the ground could cause contamination which may result to ascariasis, 71.1% of the respondents said that eating unwashed fruits can be a predisposing factor of ascariasis and lastly, 70.6% of the respondents agreed that drying dishes and utensils with a dirty cloth is a predisposing factor of ascariasis.

### Discussion of Findings

On research Question One, majority of the respondents believed that poor personal hygiene leads to *Ascaris lumbricoide* in Kwara State. This finding corroborated with the study of Anuar, Salleh and Moktar (2013), who asserted that unhygienic personal practices such as not washing hands before eating and after playing with soil, not washing vegetables/fruits before consumption, drinking untreated water and not cutting nails periodically were identified as significant predictors of *Ascaris lumbricoides* infections in Malaysia and other countries. Furthermore, poor hygiene practices associated with access to faecally contaminated water is a highly probable risk factor for increased parasitic

infection (Omar, 2010). Also, the result conducted by Amuta, Houmsou and Mker (2011), on knowledge and risk factors of intestinal parasitic infections among women in Makurdi, Benue State found that the high level of infection observed among the category that did not wash hands after defaecation and before eating could be the result of poor hygienic habits whereby soiled fingernails, dirty hands and indiscriminate eating exacerbate.

The result of research question two indicated that majority of the respondents believed that poor food hygiene can be a predisposing factor of ascariasis. The result of the study is in agreement with the report of Odu, Okonko and Erhi (2011), who opined that habit of washing vegetables and fruits with unclean water before eating was found to be a risk factor of ascariasis. In another report, WHO (2011) observed that these vegetables are normally cultivated in open farms where people defaecate and where untreated refuse are also used as manure. These coupled with the absence of clean portable water to wash the vegetables and fruits, probably accounted for the ascariasis prevalence.

Also, Onubogu (2010), observed that hawking food in the open and unprotected from street dust, inability to wash fruits before eating are an important factor that causes worms infection in children. In this course of study, indiscriminate and inadequate disposal of human waste around homes was frequently observed.

### **Conclusion**

Based on the findings of the study, it was concluded that:

1. Public primary schools teachers know about poor personal hygiene as a predisposing factor of ascariasis disease
2. Public primary schools teachers know about poor food hygiene as a predisposing factor of ascariasis disease

### **Recommendations**

Based on the findings and conclusion of the study, the following recommendations were made:

1. The Kwara State Universal Basic Education ( KWSUBE) should organise an educative programme that will enlighten both pupils and primary school teachers on the need for them to always wash their hands with soap and water after visiting the toilet to protect them against ascariasis which is

dangerous to their health.

2. The State Ministry of Education should carry out enlightenment campaign through mass media on the benefits of proper washing of fruits and foods before eating or cooking to prevent the occurrence of infectious diseases among residents in the study area which include ascariasis.
3. The school authority should provide adequate toilet facilities in the school premises that will serve both pupils and teachers to protect the school community against ascariasis disease which may occur due to improper disposal of liquid waste.

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