

## **PARASITOLOGICAL STUDY OF PALM OF MADONNA UNIVERSITY STUDENTS ELELE CAMPUS RIVERS STATE**

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### **ABSTRACT**

The aim of this work is to isolate parasites found on the palm of students of Madonna University Elele Rivers State. 100 palm swab was collected randomly from the palm of Male and female students (60 from males and 40 from females) of Madonna University Campus Elele Rivers State. Sterile swab stick was used to swab the surface of the palm of the students and was aseptically transferred to the laboratory for analysis, analysis was done using the direct microscopic method of analysis. The result was expressed in percentage and SPSS version 20 was used to carry out the statistical analysis. Data were presented as percentage and t-test. The result obtained from this study revealed that 9 % of the 100 palms examined had parasite

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cysts/oocysts/eggs. The results was also compared according to their location, boys hostel had a prevalence of 5 (8.3%0 while girls hostel had a prevalence of 4 (10%). In boys hostel prevalence of *Ascarislumbriciodes*2 (50%), *Entamoeba histolytica* 1(33.3%)*Gardialambia*1 (50%) was observed while in girls hostel had prevalence of *Ascarislumbriciodes*2 (50%),*Entamoebahistolytica*2(66.6%)*Gardialambia*1 (50%).

**Keywords:** *parasitological study, palm, students*

## INTRODUCTION

A parasite as an organism that lives in or on a second organism called a host, usually causing harm and is generally smaller than the host; it is also of different species. Parasites are also dependent on the host for some or all of their nourishment and sometimes cause the eventual death of the host (Kramer, 2016). Intestinal parasites occur worldwide in all ages and socioeconomic groups, but are most prevalent in school age children who are frequently in the habit of playing in contaminated environment and student because of poor environmental conditions. Multiple infections with several parasites such as hookworms, roundworms and amoebae are also common in poor dirty environment and their harmful effects are often aggravated by co- existing malnutrition or micronutrient deficiencies. The most common intestinal roundworms that infect adults are *Ascaris lumbricoides* (Ascariasis), *Trichuri strichiura* (trichuriasis - whipworm infection), *Enterobius vermicularis* (Enterobiasis, oxyuriasis, pinworm infection), the hookworms – *Ancylostoma duodenale* and *Necator americanus* (Hookworm infection) and *Strongyloides stercoralis* (strongyloidiasis). The symptoms of intestinal parasitic infection in humans include abdominal pain, distention, weight loss, reduced appetite, gastro intestinal effects such as nausea, vomiting, anorexia and diarrhea, improper digestion of food leading to mal-absorption from the small intestine and growth retardation (Shryock and Swarout, 2000). Most intestinal parasites can be transmitted directly by hands to

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other persons or to food from contaminated clothing or the perianal area .Parasitic infections also occur in places with poor sanitation and unhygienic practices. Parasites increase their fitness by exploiting host for resources necessary for the parasites survival i.e. food, water, heat, habitat, soil and dispersal. Parasites reduce host fitness in many ways, ranging from general or specialization pathology such as impairment of secondary sex characteristic, to the modification of host behaviour (Rutala, 2016). Such occurrence of parasites as discussed above is not new, in Nigeria. The Nigerian environment has been described as poor (Abdullahi and Abdullazeez, 2000) due to the lack of personal, community and environmental hygiene. This poor state of hygiene is accounted for by the presence of immature stages of 3 parasite eggs and cysts on water closet handles (Nock and Geneve, 2016), on toilet door handles indicating the widespread presence of parasite cysts and eggs in the Nigerian environment. The danger is evidently obvious that palms of hands could easily pick the cysts and eggs from these contaminated sources and pass them directly to the mouth or contaminated food. Examples of ways, through which parasites can come in contact with people include, contaminated hands (Ademola, 2012), fingers key holders, mobile phones , computer keyboards, currencies and other surfaces such as mobile phones, currencies and other surfaces. Such receptacles used by parasites to spread are known as fomites. It has also been confirmed that items held with the hands can be contaminated by drugs and other substances. gone from being rare and expensive piece of equipment used primarily by the business elite, to a pervasive low cost personal item.

Most activities been carried out are done with the palm hence the palm is use to hold anything like phones, also used to carry out daily activities like opening doors, washing, cleaning etc this activities expose one to parasitic infection. It has been reported that a mobile phone been held on the palm can harbor more microorganisms than a person's lavatory seat, the sole of a shoe or the door handle. The combination of constant handling and the heat generated by phones creates a prime breeding ground for all sorts of micro organisms that are normally found on our skin

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(Brady *et al.*, 2016). In recognition of the importance of hands in the dissemination of parasite cysts and eggs and other pathogenic microbes, the Global Hand Washing Day (GHWD) was first observed globally in 2006 (October, 15th) with the thrust to educate the world on the need to keep the hands always clean by washing with soap and water (Ademola, 2012). This study focuses on determining the presence of parasites, isolating and identifying the different parasitic cysts and eggs present on palms of Madonna University Elele Students.

### **AIM OF THE STUDY**

The aim of this work is to examine the parasitological parasite on the palm of the hands of Madonna University Elele Students

### **MATERIAL AND METHOD**

#### **STUDY AREA**

The area of studies is Madonna University Elele Campus,

#### **SUBJECTS**

The subjects used include healthy male and female students of Madonna University Elele Rivers State.

#### **STUDY POPULATION**

100 palm swab was collected randomly from the palm of Male and female students (60 from males and 40 from females) of Madonna University Campus Elele Rivers State.

#### **INFORMED CONCENT**

Students who participated in this study showed their willingness to participate

#### **EXPERIMENTAL DESIGN**

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The cross-sectional study design was adopted for this study

### **EXCLUSION AND INCLUSION CRITERIA**

Healthy students of Madonna University Elele Campus were all included in the study. Student who were sick in any way were excluded in the study

### **MATERIALS**

Materials used in this research work includes: Weighing balance, masking tape, physiological Saline, pasteur pipette, cotton wool, glass slides, cover slip, Applicator stick, Microscope.

### **SAMPLE COLLECTION**

Sterile swab stick was used to swab the surface of the palm of the students and was aseptically transferred to the laboratory for analysis

### **LABORATORY ANALYSIS**

#### **Microscopic Examination of samples**

##### **Direct method**

As soon as the swab samples were brought into the laboratory, the swab stick was emulsified into a beaker containing saline solution for the removal of parasitic ova, cysts and larva. The protocol involved soaking swab in saline solution and agitating 5 times within 30mins, this is to dislodge eggs, larvae and cysts from the swab. The suspension was centrifuged at 3000 rpm for 5 minutes. Following centrifugation, the supernatant was discarded into disinfectant jar and drop of the deposit fluid was placed on grease free slide and examined carefully and systematically for ova, larvae and cysts of parasite. A tincture of iodine was added to the preparation on the other end of the slide. The ova, larvae and cysts of parasite were compared with and identified in line with known features.

### **STATISTICAL ANALYSIS**

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The result was expressed in percentage and SPSS version 20 was used to carry out the statistical analysis. Data were presented as percentage and t-test will used to show significant difference at  $P < 0.05$  among test subjects.

## RESULT

A total of 100 palm swabs were collected from the palm of male and female students of Madonna University Elele Campus.

Table 1 Shows percentage Occurrence of Positive and Negative cases of parasite on the palms of undergraduate in Madonna University Elele River State according to their location, boys hostel had a prevalence of 5 (8.3%) while girls hostel had a prevalence of 4 (10%).

Table 2 showing prevalence of parasite on the palms of undergraduate in Madonna University Elele River State *Ascaris lumbricoides* was the most isolated organism with a prevalence of 44.4% followed by *Entamoeba histolytica* with a prevalence of 33.3% and the least was *Gardia lamblia* with a prevalence of 22.2%.

Table 3 showing the percentage distribution of isolates from different location Madonna University Elele River State, boys hostel had prevalence of *Ascaris lumbricoides* 2 (50%), *Entamoeba histolytica* 1 (33.3%) *Gardia lamblia* 1 (50%) while girls hostel had prevalence of *Ascaris lumbricoides* 2 (50%), *Entamoeba histolytica* 2 (66.6%) *Gardia lamblia* 1 (50%).

Table 1: Showing the Percentage Occurrence of Positive and Negative cases of parasite on the palms of undergraduate in Madonna University Elele River State according to their location

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<b>Location</b>	<b>Number tested</b>	<b>Number infected (%)</b>	<b>Number Negative(%)</b>	<b>P value</b>
Boys hostel	60	5(8.3)	55	0.52
Girls Hostel	40	4 (10)	36	0.052
TOTAL	100	9 (9)	91 (91)	

**KEY**

P<0.05: Significant

P>0.05: Not significant

Table 2: Showing prevalence of parasite on the palms of undergraduate in Madonna University Elele River State.

<b>Parasites</b>	<b>Number infected</b>	<b>Percentage (%)</b>
<i>Ascarislumbriciodes</i>	4	44.4
<i>Entamoebahistolytica</i>	3	33.3
<i>Gardialambia</i>	2	22.1

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TOTAL	9	100
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Table 3: Showing the percentage distribution of isolates from different location Madonna University Elele River State

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<b>SEX</b>	<i>Ascarislumbriciodes</i> (%)	<i>Entamoebahistolytica</i> (%)	<i>Gardialambia</i> (%)
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<b>Boys Hostel</b>	2 (50)	1(33.3)	1 (50)
<b>Girls Hostel</b>	2 (50)	2 (66.6)	1 (50)
<b>Total</b>	4 (100)	3 (100)	2 (100)
<b>P – vale</b>	0.894	0.894	0.894

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**KEY**

P<0.05: Significant

P>0.05: Not significant

**DISCUSSION**

The result obtained from this study revealed that 9 % of the 100 palms examined, Madonna University Students Elele Campus Rivers State had parasite cysts/oocysts/eggs. The contamination of the hands by parasite cysts/oocysts/eggs reflects the poor hygiene habits of the students, which is often associated with indiscriminate disposal of human faeces, regular touching of door handles of toilets in the school compound.

The result of this work was not in line with the work of some researchers such as Ademola (2012) who recorded a prevalence of 47.5% from hands of children, probably because the

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subjects used were children while this research work concentrated on adults, children are found of playing about with their palms hence are easily prone to contact parasitic infection, but this adults used in this studies were undergraduates with some extent of knowledge on hygiene practices hence the low prevalence. The results was also compared according to their location, boys hostel had a prevalence of 5 (8.3%0 while girls hostel had a prevalence of 4 (10%). Boys are normally used to playing games such football this also can be a source of contamination with parasite. In boys hostel prevalence of *Ascaris lumbriciodes* 2 (50%), *Entamoeba histolytica*1(33.3%)*Gardia lambia* 1 (50%) was observed while in girls hostel had prevalence of *Ascaris lumbriciodes* 2 (50%),*Entamoeba histolytica* 2(66.6%)*Gardia lambia* 1 (50%).*Ascaris lumbriciodes* were the prevalent intestinal parasite observed. Their presence could be attributed to a combination of factors such as poor or lack of toilet facilities, (use of water and soap), poor waste disposal in the environment coupled with indiscriminate defecation. In addition adults are seen such as boys walking barefooted especially while playing football thereby predisposing them to hookworm infections.

## CONCLUSION

According to the research work, human palms have been discovered to be the habitation of different types of organism including parasites. The palm of student used for this studu was said to contain *Ascaris lumbriciodes*, *Gardialambia*, *Entamoeba histolytica*. It is therefore not safe to be ignorant of hand hygiene benefits.

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