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Urinary schistosomiasis among children, in Wasai Special Primary School Minjibir Local Government, Kano State, Nigeria

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ABSTRACT: A study was conducted on the prevalence of urinary schistosomiasis among 220 children in Wasai Special Primary School, Minjibir local government area of Kano state. 220 questionnaires were administered and relevant informations were obtained. Early morning urine samples were collected in a clean, transparent, screwcap, plastic bottle and transported to the Biological Sciences laboratory, Bayero University, Kano.These samples were examined macroscopically & microscopically using floatation method for the presence of *Schistosoma heamatobium* eggs.

Results indicate that 68 (30.9%) of the samples collected were positive for *Schistosoma heamatobium* eggs. These of the age group 9-12 were more susceptible 46(20.9%).The prevalence of infection were found to be highest in males 61 (27.7%)than in females 7(3.18%).

The presence of wasai dam near the settlement of the school children predisposed them to higher level of activity with the water which serves as the major source of diseases transmission.

Keywords:.*Schistosoma heamatobium,* Schistosomiasis, Prevalence, Wasai (Nigeria).

Introduction

Schistosomiasis is undoubtly the most important helminthes diseases in the world today (Deeler, 1990) it is known as bilharzias and was first discovered after the death of a patient in the city of Cairo. The disease is cause by *schistosoma heamatobium.*It is most commonly found in Asia, Africa and South America especially in areas were water is contaminated with fresh water snails which may carry the parasites (Adeyeba *et al* 1998;Adewumi *et al* 1991).The disease affects many people in developing countries.

Urinary Schistosomiasis is an endemic diseases in Nigeria, it is usually a neglected common parasitic disease of childhood(Adewuwi *et al*.,1991;Bello and Edungbola,1992).In the 1950th,widespread optimism prevailed amongst these working in the field of public Health that tropical diseases including Schistosomiasis would soon be things in the past (Adeyebe and Ojeaga, 2002).

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Indeed ,some were already considered to be part of the history and it was expected that economic development would overcome any existing one. The global problem of tropical diseases, however has grown tremendously over the last decade despite much action from all quarters including W.H.O (1997).The magnitude of the problems posed by Schistosomiasis is very high in Nigeria especially among school children (Adewumi *et al* 1991).Urological abnormalities caused by Schistosoma heamatobium are common in East, West and Central Africa, though previously little was known about their importance their progress, and how they affected the patients health and well being(Forsyth,1969).Similar observation of urological abnormalities due to schistosoma heamatobium were made on school children at Ibadan, Nigeria(Gilles *et al*,1965).However ,according to Gelfand (1965) bladder calcification isa common finding among boys with a past or present infection of urinary Schistosomiasis.

Urinary Schistosomiasis is transmitted by cercaria which is able to survive for up to 24hours, these once shed they swim for only short time in water that become rapidly attached to the vegetation or objects in water. The parasite eggs are released into the environment from infected individual hatching on contact with fresh water to release the free swimming Miracidium. Miracidia infect fresh water snail by penetrating the snail. The Miracidia transform into a primary Sporocyst.Germ cells within the primary Sporocyst divide to produce secondary Sporocyst which migrate to the snail.

For most endemic countries the control of Shistosomiasis has been a challenging task. Despite considerable progress in pharmacology, Epidemiology and clinical research coupled with concerted control efforts in the last decades, Schistosomiasis still remain a major public health concern in Nigeria. The present study was under taken at Minjibir Local Government of Kano State, in order to study the prevalence of the disease in the area.

Materials and Method

Study Area

The study was conducted in Wasai Special Primary School in Minjibir Local government of Kano State. The area has an important river called Wasai dam constructed in 1976.The dam was designed for irrigation, recreation and wild life construction with reservoir capacity of 54.34millioncubic meter of water and it covers about 599km.The area is about 1/8 of Gezawa local government and 1/10 of minjibir district.Wasai special Primary school is therefore very close to this river called Wasai dam.

Collection of Samples

Urine was collected as the sample for the study. The samples were collected from 220 school children attending Wasai special primary school. These children were from Wasai town and their neighboring settlement that surround the water body. The samples were collected during early morning period between 10-12a.m. in clean wide mouth, transparent, screwcap plastic containers. 10-15ml of the samples was collected from each child. The samples were then transported to the laboratory of Biological sciences, Bayero University Kano.

Macroscopic Examination

The physical appearances of the urine samples were identified. Samples that are bloody (contain blood) were also noted at a point of collection.

Microscopic Examination

Diagnosis by Microscopy as described by Piekarski (1989) was employed. About 10ml of urine was centrifuge; using centrifuging machines for 5minutes.Inorder to concentrate eggs of the Schistosome.The deposit was examined using x40 objective for the characteristic eggs as described by (Muller, 1975 and Piekarski, 1989).

Results

Result of the Table 1 below indicated that Male were more infected (27.70%) than Females (3.18%), although the majority of the population studied was not infected (69.12%).

Table 1 *Schistosoma heamatobium* Infections among the populations observed.

Sex	Infected (%)	Non-Infected (%)
Male	27.70	69.12*
Female	03.18	

*Figure represents male and female non-infected.

The result of the Table 2 below indicated that Urine Samples that are Yellow & Cloudy in appearances were more infected with *Schistosoma haematobium* (18.63%).

Table 2 Macroscopic Appearances of Urine samples in relation to Microscopic infections.

Macroscopic Appearances	Microscopic infection (%)
Red Brown & Cloudy	6.36
Brown-Cloudy	5.45
Yellow & Cloudy	18.63
Amber and Clear	0.00
Pale yellow	0.00

The table below shows that these between the age groups 9-12 were more infected with *Schistosoma heamatobium* (20.90%) than any age group in this study.

Table 3 Infections of *Schistosoma heamatobium* in different age groups.

Age	Infection (%)
5-8	5.00
9-12	20.90
13-15	5.00

Discussion

Studies have indicated that urinary schistosomiasis is a major health problem in the rural areas of Middle East and most African countries. It remains as one of the major health problems facing developing

children. The endemicity of the diseases in many rural areas were attributed to ignorance, poor living condition, inadequate sanitation, water supply, personal and environmental hygiene as well as water contact activity with snail infected rivers, streams and Pond (W.H.O., 2003)

The present study shows that urinary Schistosomiasis is present among Wasai special primary school children under Minjibir Local government in Kano State and the prevalence of the infection were higher in males than in females (Table1).This finding is very much similar to the finding of (Adeyeba *et al*, 1998).This finding could be explained away considering the fact that boys are very active. The interaction with water appears more in males than females student .The boys often engaged in unbridled swimming fishing, and irrigation especially after school hours more than the female counterpart. This practice exposes the boys more to risk of infection, since the level of exposure or contact with water containing cercaria of parasite and the risk of infection are linearly related.

Infection with *Schistosoma haematobium* were found to be higher among children of the age group 9-12 (Table 3) this is similar to the finding of (Bello and Edungbola, 1992) were prevalence was found to be higher among these of the age groups (10-12). Subject of this age group were seen to engaged in activities which necessitate more contact with water, because they are more matured to engaged in activities such as fishing and irrigation than these of the lower age.

The Macroscopic appearance of the urine sample has been found in this study to have a bearing with infections level. Urine samples that yellowish and cloudy in appearances were found to have higher rate of infection (Table 2).This may be attributed to some pathological changes occurring during infection.

Great success of eradication of urinary Schistosomiasis would be achieved through the integration of Complementary Strategies such as diseases surveillances, Chemotherapy, health education, water supply and sanitation in the area and the country at large.

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