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Incidence of Urinary Schistosomiasis Amongst Out-of-School Pupils and “Almajiris” in Dikwa, North Eastern Nigeria

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Incidence of Urinary Schistosomiasis Amongst Out-of-School Pupils and “Almajiris” in Dikwa, North Eastern Nigeria

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Abstract- Urinary schistosomiasis, which is one of the commonest forms of the parasitic disease is a major debilitating disease characterized by blood in urine. The study aimed at the exploration and description of the knowledge, attitude and practice of the community members with regards to schistosomiasis in Dikwa Local Government Area of Borno State, Nigeria. A cross-sectional study of 302 school pupils and “Almajiris” 7 - 15 years was undertaken using a uniform set of structured interview schedule administered by trained field assistants. This was supported with some qualitative data collected from in-depth interview with community leaders and “Mallams”. One-third of the people interviewed were aware of the schistosomiasis. For a majority however, the perceived causes of the disease included witchcraft and sexual or body contact with infected persons. The study observed a total prevalence of 48.7% among the studied subjects. 72% of the “Almajiris” were infected with urinary schistosomiasis with 92% among the age group 12 – 16 and 58% among the age group 7 – 11years. 32% of the school pupils were infected with highest (39.5%) among the age group 12 – 16 years and 26.5% among age group 7 – 11 years. Only 10.6% of the studied subjects were aware of the disease. The study observed poor knowledge of the disease even among the parents/guardians of the primary school pupils. The insurgency has a great impact in the spread of the diseases as most of the inhabitants who rarely go to the stream do so now due to lack of potable water and current security challenge in Dikwa.

Keywords: urinary schistosomiasis, security challenge, “almajiris”, dikwa, nigeria.

I. INTRODUCTION

Urinary schistosomiasis is a major debilitating disease characterized by blood in the urine. In the worst cases urinary schistosomiasis will cause bladder cancer.

An alarming 201-5 million Schistosome infections (mainly *Schistosoma haematobium*) were estimated to occur in Africa, accounting for more than

97% of the number of infections worldwide¹. Nigeria is one of the highly endemic countries where the disease has been unsystematically reported and large areas remain where the disease status is unknown. Schistosomiasis is associated with poverty and poor living conditions, inadequate sanitation, and poor water supply as well as unplanned water resource development².

Urinary schistosomiasis is endemic in Nigeria in general. The prevalence levels of urinary schistosomiasis in both rural and urban communities is within 2% and 90% and occurring more among the poor and marginalized group³.

In Borno State, urinary schistosomiasis has been reported in several communities of Nigeria (4 - 7). However, these studies were based only on school aged children with only one on the “Almajiris” 7. reported the disease amongst primary school pupils and “Almajiris” in Maiduguri, Borno State, Nigeria. Even then, there is still the need to obtain more information on schistosomiasis in this group because they constitute an appreciable number of the population in this part of Nigeria and in order to justify their inclusion in mass treatment program.

The study aimed at the exploration and description of the knowledge, attitude and practice of the community members with regards to schistosomiasis in Dikwa Local Government Area of Borno State, Nigeria.

II. MATERIALS AND METHODS

a) Study Area

The reports on prevalence studies carried out within and outside Maiduguri prompted the researchers to conduct this research in Dikwa town headquarter of Dikwa Local Government Area of Borno State. The study was carried out between April and May, 2013 so as to evaluate the peoples’ attitude, knowledge, and incidence of urinary schistosomiasis. Dikwa is located along Gamboru-Ngala road to the Eastern part of Maiduguri, 86Km away from the State head quarters. Dikwa harbours varieties of streams, ponds and lakes where the intermediate host are found. It occupies an area of about 1,663sqKm and lies on longitude 14o East and Latitude 13o North. The ethnic group comprises of;

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Kanuri, Shuwa, Gamargu, and Fulani. Major occupation is farming and trading but few are civil servants. The commonest crops grown are millet, beans and groundnut. However, the dry season farming grows rice, wheat, onion, tomatoes and pepper in commercial quantities. There is the famous Rabe's fort which serves as a tourist attraction to people within and outside the country. Dikwa is one of the LGAs affected by the insurgency hence the reason for some constraints encountered during the conduct of this research.

b) Ethical Consideration

The protocol for this study was approved by the "Mallams" (who are the guardians of the Almajiris) and the parents of the out-of-school pupils, on the agreement that infected subjects would be referred to the health centre for appropriate treatment. Informed consent was obtained from each of the participants. Information about schistosomiasis and direct contact with water bodies were obtained and recorded in the questionnaire. Subjects who responded to the questionnaires but declined sampling were excluded from the study. Infected subjects were referred to the Primary Healthcare Centre for immediate treatment.

c) Study Population

The study population comprised of subjects who were between the ages of 7-15 years. Due to the insurgency and relatively poor compliance, all the primary schools in Dikwa were closed; hence the researcher sought the assistance of ward heads to be able to sample the primary school pupils.

The study is prospective on "ALMAJIRIS" and Primary school pupils in Dikwa of Northern Borno State. A total of 500 questionnaires were administered by one of the authors who is an indigene of Dikwa with the help of staff of the Dikwa General hospital. The questionnaire was coded in English but the author interpreted to those who do not understand English. The distribution was done in such a way that it cuts across all age groups, sexes and affiliation, whether school pupil or "Almajiris". Before the start of this research, the author consulted the respective ward heads (Bulama) and "tsangayas" for the objectives of this research. A total of 302 urine samples were collected from the subjects that responded. One hundred and twenty-two (122) urine samples from the Almajiris and one hundred and eighty (180) samples from the out-of-school pupils.

The questionnaire sought to obtain name, age, previous residence, duration of stay in the present community, religion, history of anti schistosomal drug, observation of blood in urine and so on. The subjects were asked about the causative agent, evidence of awareness about the infection and relationship between infection and water contact.

The subjects were given an enlightenment lecture before sampling commenced.

The samples collected were the much that could be gotten considering circumstances around the study area. Samples were randomly collected from pupils and "Almajiris"

d) Collection of Sample

The sampling was carried out between March – May, 2013. The researcher being a native carried out an awareness lecture using the local language (Kanuri) in the various wards and "tsangayas" sampled. The subjects were given sterile urine containers and advised to produce only terminal urine. The collection was done between 10am and 2pm because it is the period that eggs of *S.haematobium* are more likely to be passed in urine. The samples collected were preserved in a solution of 10% Formol saline at the ration of 1:100. Structured questionnaire were administered to parents and Mallams for demographic information and source of drinking water.

e) Parasitological Examination

In the laboratory, the urine was first examined macroscopically for colour, presence of blood and consistency. The procedure by 10 was applied. Urine samples were transferred into centrifuge tubes and spun at 15000rpm for 5 min. Deposits was examined for the presence of parasite eggs.

f) Data Analysis

The data obtained were analyzed using Statistical Package for Social Sciences (SPSS) version 17.0 into simple percentiles and test for significance.

III. DISCUSSION

Several studies on urinary schistosomiasis had focused on school aged children and adults^{5, 6, 11-14} and so on. However, only one was carried out on the "Almajiris" who form a part of the Northern Nigerian population.

This study revealed an overall incidence of 48.7% which is higher than the study carried out on the same subjects by⁷ which revealed an overall prevalence of 30.4%. The slightly higher prevalence of this study may be attributed to the fact that this work was carried out in Dikwa a Local Government Area with lesser provision of social amenities such as potable water. Also the level of awareness of the disease in Maiduguri is higher than it is in Dikwa and consequently the subjects may not frequent the infested water.

The prevalence of 32.7% of urinary schistosomiasis among Primary school pupils is in agreement with the study by¹⁴ who reported prevalence of 32.2% in Ogun State, Balla and Jabbo who revealed prevalence of 34.2% among school aged children in the rural communities of Mayo-Belwa. However, similar studies carried out in Maiduguri revealed lower prevalence of 11% by⁶. The reason may be due to the current insurgency crisis which stops pupils from

attending schools hence having more time for swimming and possible contact with the infective cercarial larvae in water.

The 75% prevalence among the "Almajiris" is very alarming and is in agreement with the previous study by 7 which revealed prevalence of 72.9% among Almajiris in Maiduguri. This group lack parental control which makes them more likely to go out for swimming. They also lack adequate knowledge of the disease hence do not seek for treatment and this makes them reservoirs of the infection in the communities. 7 further added that children in this region are more likely to visit water body for recreation and domestic needs due to the harsh weather that persists for most part of the year. All ages studied had infections which indicate infection with schistosomiasis starts early in life.

The high prevalence observed among the age group 12 -16 agrees with the findings of 16 who reported prevalence of 65.8% among age group 10 -14 years in Quan'an - Pan Local Government Area of Plateau State. 17 also reported high prevalence of 57.4% among age group 10 -14 years in Danjarima Community, Kumbotso Local Government Area of Kano State.

In 90.4% of the studied subjects the disease was not treated because of the belief that there is no

effective cure for it and that it reoccurs after treatment. But perhaps more importantly, the infection is not treated because it is considered a normal growing up process, which the infected person outgrows. A very high proportion of people depended on the schistosomiasis-infected river for all the domestic needs even where there are alternative sources of water. People argued that the river/stream give them purer water than the hand dug wells. Furthermore, swimming is a popular activity in the river during all seasons, irrespective of sex and age. In conclusion, the study has identified gaps in the knowledge of the cause and means of transmission, poor perception and management practices, which calls for systematic health education on schistosomiasis in the communities. The study observed poor knowledge of the disease even among the parents/guardians of the primary school pupils. They believe the blood in urine is a sign of sexual maturity and hence no need of seeking medical help. The mass educational enlightenment as emphasized by 4 needs to be instituted. The insurgency has a great impact in the spread of the diseases as most of the inhabitants who rarely go to the stream do so now due to lack of potable water and current security challenge in Dikwa.

IV. RESULTS

Table 1 : Prevalence of urinary schistosomiasis among the studied subjects

Subjects	Number examined	Number positive (%)
"Almajiris"	122	88 (72.1)
Pupils	180	59 (32.7)
TOTAL	302	147 (48.7)

Table 2 a : Age distribution of urinary schistosomiasis among primary school pupils

Age group	Number examined	Number positive (%)
7 - 11	94	25 (26.5)
12 – 16	86	34 (39.5)
Total	180	59 (32.7)

Table 2 b : Age distribution of urinary schistosomiasis among "Almajiris"

Age group	Number examined	Number positive (%)
7 - 11	72	42 (58.3)
12 – 16	50	46 (92)
Total	122	88 (72.1)

Table 3 : Prevalence by occupation of Pupils' parent

Occupation	Number examined	Number infected
Fishing	20	8 (40)
Farming	86	30 (34.8)
Artisan	20	11 (55)
Civil servant	16	3 (18.8)
Business	38	7 (18.4)
Total	180	59 (32.7)

Table 4 : Respondents' demographic information

	Response	Frequency	%
Reasons for visitation to Water body	Swimming	86	28.5
	Fishing	92	30.5
	Fetching	74	24.5
	Total	302	
Observation of blood During urination	Yes	55	18.2
	No	247	81.8
	Total	302	
Source of drinking water	Pipe borne	51	16.9
	Borehole	104	34.4
	Stream/River	147	48.7
	Total	302	
Visitation to clinic/ Hospital	Yes	29	10.6
	No	273	90.4
	Total	302	

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