

## Prevalence and Awareness of Urinary Schistosomiasis among Primary Schools Children in Alazozab Area. Khartoum September 2018

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### Abstract

**Background /Aim:** Urinary Schistosomiasis is widely distributed in most regions of Sudan. It is a major health issue after Malaria. This study was carried out to determine the prevalence and awareness among primary school children in Al Azozab area to study the prevalence and awareness of urinary schistosomiasis among primary schools children In Alazozab and to determine the most common age group with a high prevalence of *S.hematobium* infection, to measure the prevalence of hematuria among the positive *S. haematobium* infection cases and to assess the awareness and attitude and practice of schools children about schistosomiasis.

**Methods:** A descriptive study was conducted in the period from 16 September - 11 October 2018 among primary school's children aged 9 to 15 years old males. A total of 220 urine samples were examined, interview questionnaire done to the children.

**Result:** The overall prevalence of *S. haematobium* infection was 19.5%. There is a highly significant association between *S. haematobium* infection and the presence of hematuria.

**Conclusion:** The study showed an epidemiological event of a marked increase in the prevalence of *S. haematobium* infection in the Alazozab area. Regarding the overall results, we conclude that: The age group of (12-14) years has the highest prevalence (21%) of infection. There is highly significant association between *S. haematobium* infection and the presence of hematuria. Despite the good knowledge about the disease, there is a wrong attitude and practice due to the lack of knowledge about complications.

**Keywords:** *S. haematobium*, School Children, Alazozab

## 1. INTRODUCTION

Schistosomiasis is a water -borne parasitic disease. It is caused by digenetic trematode flatworms (flukes) of the genus *Schistosoma* [1]. Schistosomiasis is one of the WHO most neglected diseases. It is a major tropical and subtropical disease commonly found spread in many African countries and other developing countries in Asia and South America, schistosomiasis is the most prevalent parasitic disease after malaria in terms of socioeconomic and public health importance in the developing world. Schistosomiasis affects almost 240 million people worldwide, and more than 700 million people live in endemic areas [1].

Schistosomiasis is prevalent in tropical and subtropical areas, especially in poor communities without access to safe drinking water and adequate sanitation. It is estimated that at least 90% of those requiring treatment for Schistosomiasis live in Africa [2].

Nowadays schistosomiasis is prevalent in all states of Sudan and it has increased in distribution and prevalence as a result of progressive expansion in water resource development and population movement. Children who live close to water resources are more prone to being infected due to their lack of awareness. Morbidity is also increasing due to various clinical presentations and complications, therefore this study is primary designed to measure prevalence and awareness of urinary schistosomiasis among primary school children In the Alazozab area. Despite the availability of a potent drug, praziquantel, the control of the disease as a public health problem remains a challenge. Schistosomiasis leads to considerable morbidity and mortality. Among the world's serious parasitic diseases, schistosomiasis ranks second only to malaria in the number of people infected and the extent of the areas where the disease is endemic.

## 2. MATERIAL AND METHODS

### Study Design

Non interventional descriptive cross-sectional study based on schools

### Study Area

The study was conducted at Alazozab town, Khartoum, and Khartoum State, SUDAN. Which restricted by Abu adam from the south, wad Ageeb from west, Alamria town from the east and alshijara street from the north, this area close bhar abid.

### Study Population

Primary Schools male children in AlAzozab area,

There were three schools (Wd Ageeb primary school which had 217 students, Alazozab primary school which had 316 students, Aldbasin which had 152 students.

### Inclusion Criteria

- Male children in Governmental primary schools children in Alazozab
- 6<sup>th</sup> to 8<sup>th</sup> grade

### Exclusion Criteria

- Females
- Below 6<sup>th</sup> grade

## 3. RESULTS

A total of 220 urine samples of 220 males were randomly collected from (9-15) years old from 3 primary school children (Wd Ageeb, Alazozab, Aldbasin) in Alazozab area, Khartoum Sudan. The collection and diagnosis were done. 43 were found positive for *S.haematobium*, this constituted a 19.5% prevalence rate.

Table 1.

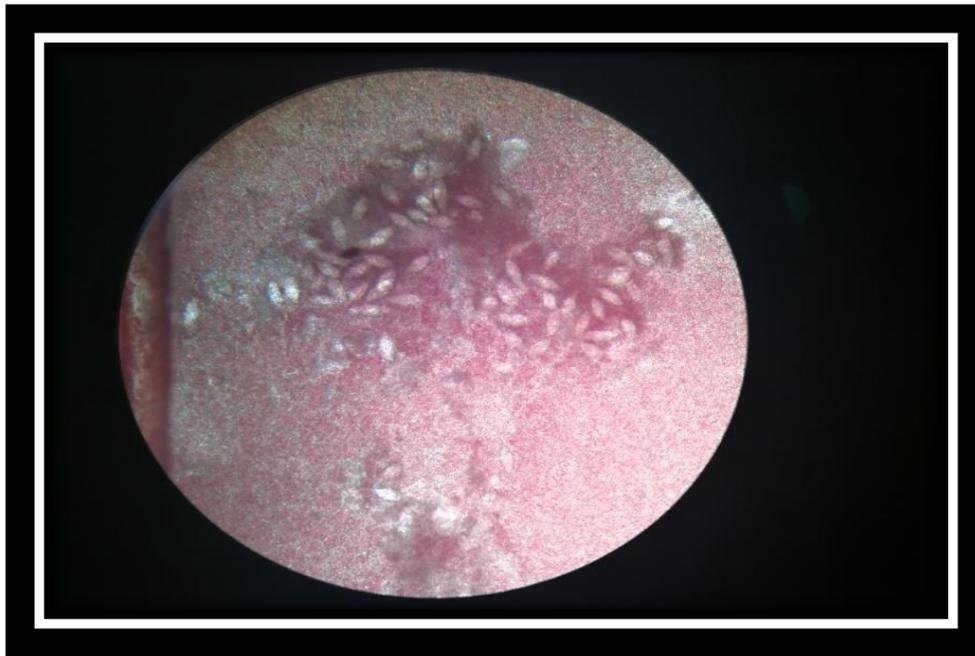
Characteristics	positive	Negative	Total	p-value
<b>Age group</b>				
9-11	7	38	45	
12-14	32	118	150	
15 or more	4	21	25	
<b>Macrohaematuria</b>				
Positive	3	0	3	.000
Negative	40	177	217	
<b>Microhaematuria</b>				
Positive	43	0	43	.000
Negative	0	177	177	



**Figure 1:** Shows macroscopic heamaturia detected among the infected school children in alazozab area September 2018.



**Figure 2:** Shows microscopic view of urine sample with both *S. heamtobium* and *S. mansoni* ova detected among the infected school children in alazozab area September 2018



**Figure 3:** Shows microscopic view of urine sample with high intensity of infection (50 ova) detected among the infected school children in Alazozab area September 2018.

#### 4. DISCUSSION

Previous studies done by ministry of health in Sudan have suggested that the infection with *Schistosoma haematobium* in Khartoum state as general, and in Bahar Abiad area particularly is markedly increased during the last years.

Our study in the Alazozab area showed a marked increase in the overall prevalence of *S. haematobium* infection up to 19.5%. This may be due to the study area being close to the river on one hand, and the unsuccessful snail control program on the other hand. Furthermore, the lack of (health education, sanitation, early diagnosis) and delay of treatment might be additional factors for this increase in the prevalence.

The study findings was similar to the study done in Nigeria [3] that showed significant association between age and infection. The previous study done in Nigeria showed the high infection cases in the older (10-14 years showed the high prevalence (69.9%)) similar to our study which showed the highest prevalence between the age 12-14 years which was (21%) while the older age (more than 15) showed the least prevalence (16%). We suggest that the older students are more aware with the danger of the disease, and so they do not expose to the water resources.

Our study showed that the prevalence of haematuria was related to *S. haematobium* infection. The macroscopic examination of haematuria showed a percentage of 6.9% among *Schistosoma* infected patient, while the microhaematuria detected by microscope found 100% of the cases, in comparison to a study done in Al-lamab Bhar Abiad [5] which showed the macroscopic examination of haematuria showed percentage (77.8%) among *Schistosoma* infected patient, while the microhaematuria detected by microscope found (97%) of the cases. This variation may be due to the difference in the intensity of infection between the previous study and our study, it can also be due to the late diagnosis and treatment of the patients.

Also the prevalence in the Al-lamab bhar abid study (5)(which was done in 2018 showed the prevalence to be 24% which is close to what our study showed as the prevalence was 19.5%) this support the Bhar Abid areas are a big source of schistosomiasis.

Our study showed that most children are well aware of schistosomiasis symptoms, modes of transmission and ways of prevention but despite that there are wrong attitude and practice as the majority of them go swimming and urinate in water collection areas, in comparison the study which was done in River Nile state [4], Sudan which showed that the higher prevalence and intensity of infection was more among the students who are aware of the disease. This may be because most of them don't recognize the risks and complications of schistosomiasis.

#### 5. CONCLUSION

Our study showed an epidemiological event of a marked increase in the prevalence of *S. haematobium* infection (19.5%) in the Alazozab area.

Regarding the overall results, we conclude that:

The age group of 12-14 years has the highest prevalence (21%) of infection.

There is a highly significant association between *S. haematobium* infection and the presence of hematuria among positive samples (100%).

Despite the good knowledge about the disease, there is a wrong attitude and practice due to the lack of knowledge about risks and complications.

#### 6. RECOMMENDATION

According to our study results we recommend prompt intervention by applying proper prevention and control measures which include:

- Health educations focus on the risks and complications and community participation.
- Safe water supply, sanitation, and use of latrines.
- Targeted chemotherapy of infected school children.
- Drying and draining of canal.

- Clearing of canals from weeds and vegetation.
- Using molluscicides and Bring animal predators that feed on snails.
- Doing an interventional study in this area
- Create new laws that prevent children from swimming or urinating in the water.

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