

*Research Paper*

## **Assessment of Knowledge and Attitude among Khartoum Population regarding Schistosomiasis**

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**Abstract:** According to World Health Organization (WHO) reports, prevalence of Schistosomiasis in Khartoum state among school children was 4.3% in 2004, increased to 9.2% in 2010. This community-based study aimed to assess knowledge and attitude of the Khartoum Sudanese community towards the disease. A sample of 378 households by the 13th cluster technique was selected from 50 clusters. The head of each household was interviewed and the collected data was analyzed by using SPSS program version 17. Prevalence of Schistosomiasis in the target area was high (13.2%). Regarding knowledge of the disease, 57.1% of the population had poor knowledge about the symptoms of intestinal Schistosomiasis, 67.1% had poor knowledge about complications of urinary Schistosomiasis, and 69.6% had poor knowledge about complications of intestinal Schistosomiasis. It is concluded that prevalence of Schistosomiasis in Khartoum community is high and knowledge about the disease is poor.

**Keywords:** Khartoum, Schistosomiasis, Knowledge and Attitude.

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### **1. Introduction:**

Schistosomiasis is a major communicable disease with socioeconomic importance of public health in the developing world. [1] It is a chronic disease that can impair growth and cognitive development in children and damage internal organs. [2] Urinary form of Schistosomiasis is associated with increased

risk for bladder cancer in adults. [3] The disease is found most commonly in areas where the water contains large numbers of fresh water snails, the intermediate host of the parasite. [4]

The global distribution of Schistosomiasis varies widely. In Sudan, there has been over the last ten years a serious increase in endemicity and prevalence of Schistosomiasis infection as a result of progressive expansion in water resource projects, population movements and limited control measures. [5] According to World Health Organization (WHO) reports, prevalence of Schistosomiasis in Khartoum state among school children (at southern Khartoum region) was 4.3% in 2004, increased to 5.4% -9.8% in 2006. It was 2.1% in 2007, 2.9% -3.9% in 2008, 6.3% in 2009, and 9.2% in 2010 [6].

This study was planned to assess the level of knowledge about Schistosomiasis, to assess attitude of the community towards Schistosomiasis, and to estimate the prevalence of Schistosomiasis among the study population.

## 2. Materials and Methods:

This was a cross-sectional community- based descriptive study conducted at Khartoum, the capital of Sudan, during the period between February and November 2011.

Population census in the area of study (southern Khartoum) was about 7000 inhabitants. This population composed of different Sudanese tribes and ethnic groups. The area was divided into three blocks (north, south and west) with 1500 as the total number of households in the area. These households were divided into 50 clusters. From these clusters, 13 clusters were selected randomly with a calculated sample size of 378. The head of every household (father or mother) was interviewed. Informed verbal consent was obtained from those who accepted to participate in the study prior to the interview after thorough explanation of the aims and methods of the study. Anyone who stayed less than six month in the area was excluded from the study.

The interview included filling of a standardized administrated questionnaire. The variables included in this questionnaire were age, gender, tribe, educational level, occupation, marital status, family size, Knowledge about Schistosomiasis (geographic distribution, signs, symptoms, complications, risk factors, incubation period, causative agents, types of parasite, mode of transmission, treatment, and prevention), and the attitude towards Schistosomiasis. An ethical approval was obtained from the Institutional Review Board at Neelain University. Collected data was entered into the computer and analyzed by SPSS program.

## 3. Results and Discussion:

The study population included about 92% adults and 8% children, 69% males and 31% females. Most of the interviewed participants were in age group between 21-30 years (Table 1).

**Table (1):** Age distribution of the study population

Age in Years	Male	Female	Total
10 to 15	12 (38.7%)	19 (61.3%)	31

16 to 20	48 (75%)	16 (25%)	64
21 to 30	79 (66.4%)	40 (33.6%)	119
31 to 40	57 (75%)	19 (25%)	76
41 to 50	35 (74.5%)	12 (25.5%)	47
51 to 60	31 (75.6%)	10 (24.4%)	41
Total	262 (69.3%)	116 (30.7%)	378

About 78% had poor educational level, up to secondary school level (Table 2).

**Table (2):** Educational Level

Educational Level	Male	Female	Total
Illiterate	35	7	42
Primary School	27	30	57
Secondary School	119	41	160
University	70	37	107
Above University	11	1	12
Total	262	116	378

About 30% of participants were students (Table 3).

**Table (3):** Occupation of Study Population

Occupation	Student	Farmer	Employed	Private Sector	Housewives	Retired	Idle
Percentage	30.2	8.5	24.6	14.1	14.7	0.3	7.6

Most families in the study population (67%) were medium-sized (containing 4 – 7 individuals). Sources of information and knowledge about Schistosomiasis to the population are shown in table 4.

**Table (4):** Sources of Knowledge to the population

Source	Health Workers	TV/Radio	Schools	Newspapers	Posters	Public Committee
Percentage	28.9%	29.2%	37.8%	1.5%	0.3%	2.3%

Poor knowledge about Schistosomiasis was prominent in endemicity and complications (Table 5).

**Table (5):** Levels of Knowledge about Schistosomiasis

Variable	Poor	Good	Excellent
Endemicity	76.3%	3.9%	19.8%
Risk Factors	26.7%	0.8%	72.5%
Types of Schistosomiasis	13.7%	41%	45.3%
Symptoms of Urinary type	2.6%	62.7%	34.7%
Symptoms of intestinal type	57.1%	0.3%	42.6%

Mode of transmission	0.4%	35.2%	64.3%
Suitable environment of infective stage	8%	79%	13%
Complications of urinary type	67.1%	2.1%	30.8%
Complications of intestinal type	69.6%	1.8%	28.6%
Preventive measures	35.7%	4.8%	59.5%

About 82.5%, 70.6%, 56.2%, and 54.3% know nothing about the incubation period, intermediate host, causative agent, and the infective stage of the parasite, respectively (Table 6).

**Table (6):** Answers by Yes or No in the Questionnaire

Variable	Yes	No
Ever heard of Schistosomiasis	92%	8%
Awareness about presence of disease in the study area	67%	33%
Infectious disease	58%	42%
Infective Stage	45.7%	54.3%
Intermediate host	29.4%	70.6%
Causative Agent	43.8%	56.2%
Incubation Period	17.5%	82.5%

Possibility of treatment	94.7%	5.3%
Possibility of prevention	99.5%	0.5%

About 95% of study participants believed that medical treatment of Schistosomiasis is effective and about 90% had the attitude to go directly to a doctor when infected.

The poor educational level of most of the interviewees (78%) and the low socio-economic status definitely affects the different aspects of knowledge and attitude towards disease and health in the community. Several studies, especially in Africa, reported similar results.

**Kamga et al** [7] administered questionnaires to 2566 adults to determine community knowledge of neglected tropical diseases, including Schistosomiasis, in Cameroon. They reported low percentage of knowledge about Schistosomiasis (49.1%), mostly among the female populations and people living in rural areas.

**Midzi et al** [8] reported high prevalence distribution of *S. haematobium* (77.8%) and *S. mansoni* (33.3%) in Zimbabwe. They interviewed 172 school children to assess knowledge and attitudes of this target age group in relation to Schistosomiasis. They reported that only 32% of the respondents had correct knowledge about causes of Schistosomiasis and only 22.1% knew correct measures to control Schistosomiasis.

**Salehe et al** [9] assessed differences in Schistosomiasis knowledge in 240 farmers working in traditional, improved traditional and modern irrigation schemes in Tanzania. They reported that knowledge of Schistosomiasis is related to proximity to health facilities of the community, trainings that have been provided to farmers, and farmer's literacy rate.

**Acka CA et al** [10] carried out knowledge and attitude surveys in two rural communities of Cote d'Ivoire using in-depth interviews and structured questionnaires administered to household heads. Access to clean water was lacking in both communities (as the case in several parts of southern Khartoum). There was poor knowledge and understanding about Schistosomiasis. In the villages with community-based interventions, most households knew better about Schistosomiasis compared to villages where school-based interventions were implemented (P, 0.001). About two-thirds of respondents from the community-based intervention village indicated that the research and control project was the main source of information.

**Mazigo HD et al** [11] selected 400 participants to assess knowledge and perception and determine prevalence of *Schistosoma mansoni* in the Sengerema district in Tanzania using a structured questionnaire. The prevalence of *Schistosoma mansoni* was 64.3%. Less than 50% of the interviewed subjects demonstrated an understanding of control measures and transmission of Schistosomiasis. About 87.5% of the respondents reported to have heard of Schistosomiasis and the main source of information were schools. Knowledge about transmission increased with age (p=0.005). The control measures mentioned by 34.5% of the respondents were in line with the World Health Organization's control strategies against Schistosomiasis.

**Tiglaio TV** [12] assessed the knowledge and attitudes of people in relation to Schistosomiasis in an endemic area in Leyte, Philippines. The study indicated that the knowledge of respondents on the transmission, prevention, treatment and control of Schistosomiasis is affected by sex, age, educational

attainment, occupation, economic status, and experience with the disease. The results of the study suggested that target population for education should be females, the younger age groups, those with low educational attainment and the lower socioeconomic class.

#### 4. Conclusions:

It is concluded that knowledge about Schistosomiasis in the area of study is mostly poor; the major cause seems to be the lack of proper and regular governmental health education. However, attitude of people when exposed or infected is acceptable. So, more efforts are needed towards intensive health education training courses given to teachers, community leaders, and households.

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