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PREVALENCE OF *SCHISTOSOMA HAEMATOBIUM* AMONG PRIMARY SCHOOL PUPILS IN ZAKI LOCAL GOGERNMENT AREA OF BAUCHI STATE

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ABSTRACT

The prevalence of Schistosoma haematobium, and it's effects on the academic performance of primary School pupils in Zaki local government of Bauchi State. The research design was experimental and a complete randomized design was adopted in sampling, samples of urine was collected from three primary schools in Zaki Local Government area ,50 specimen bottles we're distributed to each school, and 133 samples were successfully returned. The samples were transported to the laboratory and were experimented using a urine sediment preparation method. 19 Ova were detected in central primary School Zaki with (46.34%) prevalence, 20 ova detected in Galadima primary School with (40%) prevalence and 17 ova were detected in central primary School Sakwa with (40.48%) prevalence. It was concluded that Schistosomiasis is prevalent (mild

Introduction:

Schistosomiasis, is a parasitic infection caused by digenetic blood *trematode* worms of the family Schistosomatidae, which is one of the most prevalent neglected tropical diseases (NTDs) and still considered as a major public health problem in about 77 developing countries in the tropics and subtropics. It is estimated that over 240 million people are infected, with about 700 million people worldwide at risk of infection. Nigeria has the greatest number of cases of Schistosomiasis worldwide, with about 29 million infected people, among which 16 million are children, and

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prevalence) in Zaki local government area of Bauchi State. Knowledge of personal hygiene and how to be safe when coming in contact with fresh water containing snails has to adopt and finally there should be safe source of water available.

About 101 million people are at risk of schistosomiasis. In 1988, the Federal Ministry of Health (FMOH), in collaboration with the National *Schistosomiasis* Control Program (NSCP), deliberated on the possibility of bringing down the prevalence by 50% within 5 years in operational areas. However, these efforts were hampered by the lack of baseline data on the distribution of the disease in a broad scale. The disease is spread by contact with water that contains the parasites. These parasites are released from freshwater snails that have been infected.

Zaki is a Local Government Area of Bauchi State, Nigeria. Its headquarter is in the town of Katagum. It has an area of 1,436 km2 and a population of 191,457 at the 2006 census. The postal code of the area is 752, their malour business for livelihood are farming which include fishing and irrigation. Schistosomiasis prevalence and morbidity is highest among school children, adolescents and young adults. Thus, the negative impacts on school performance and the debilitation caused by untreated infections demoralize both social and economic development in endemic areas. Urinary schistosomias is endemic in the sub-Saharan region of Africa, including in Nigeria.

Schistosomiasis also known as bilharzias or snail fever or katayama fever is a water-based parasitic disease caused by a blood fluke, which remains one of the most prevalent parasitic infections worldwide. In tropical countries, schistosomiasisis second only to malaria among parasitic diseases with the greatest economic impact (Usman,and Babeker,2017) Over 243 million people in 78 countries in the world are affected by the disease, occurring mostly in the tropical and subtropical areas, especially in poor communities without access to safe drinking water and adequate sanitation (Thetiot-Laurent *et al.,* ;WHO, as cited in Usman and Babeker , 2017)It is estimated that at least 90% of those requiring treatment for Schistosomiasislive in Africa. The disease occurs in all 36 state of Nigeria including the Federal Capital Territory. Nigeria is an endemic area with an estimated 11 million people infected (Larotki and Davis, Ekpo and Mafiana, as cited in U Usman and Babeker 2017). Chitsul *et al* (as cited in Usman and Babeker 2017) estimated that 101.28 million people are of infection in Nigeria while 25.83 million people are actually infected. Five species of

schistosome infect *humans S. haematobium, S. mansoni, S. japonicum, S. mekongi and S. intercalatum. S. intercalatum* is parasite of cattle in West Africa, also occasionally causes the disease in human. All *Schistosoma* species affect intestine and liver with the exception of *Schistosoma haematobium* that affect urinary tracts. Chronic schistosomiasisalso causes physical growth and cognitive delays in children (WHO, as cited in Usman and Babeker 2017). The disease is spread by contact with water that contains the parasites. These parasites are released from freshwater snails that have been infected. The disease is especially common among children in developing countries as they are more likely to play in infected water. Other high risk groups include farmers, fishermen and people using infected water for their daily chores. Diagnosis is by finding the eggs of the parasite in a person's urine in case of *S. haematobium* or stool in the case of other Schistosoma species. It can also be confirmed by finding antibodies against the disease in the blood (WHO, as cited in Usman and Babeker 2017).

MATERIALS AND METHODS

Prevalence of *schistosoma haematobium* among primary School pupils in Zaki local government, Zaki is located in the Northeastern part of Nigeira, three primary schools ware selected for the research. Each pupil was given a clean well labelled sterile specimen container with which urine sample was collected and transported using a cold box to the laboratory.

In the laboratory the urine was first examined macroscopically for color, presence of blood and consistency. Urine sediment preparation was used for microscopic examination, urine samples were transferred into a glass test tubes and spun for 2000 revolution per minute (rpm) for 2 minutes in a centrifugal machine, the supernatant was discarded and the deposit was mixed , 2 drops of the deposit was put on a clean glass slide and covered with a cover slip and examined for the presence of parasites (eggs).Viewed on electric microscope.

RESULTS

Samples of urine were collected from our subjects in a specimen bottle. A total of 150 containers were given to the subject aged between 7 to 11 years of primary 3 to 5 from 3 randomly selected primary schools. 133 containers were returned while 29 were missing. Out of the 133 participants 65 were females while the remaining 68 were males.

Table 1: Central Primary School Zaki

Sex	Number of pupils	Ova detected	Prevalence	Odds ratio	CI	Chi square	P-value
Males	23	13	56.52	2.600	0.722-9.357	2.184	0.139
Females	18	6	33.33	0.385	0.107-1.384	2.184	0.139
Total		41		19		46.34	

From our null hypotheses which states that Schistosomiasis cause no effect on primary School pupils, is not prevalent and has no effect on academic performance of primary School pupils in Zaki local government, considering the calculated value (0.139) is less than the table value (0.5), therefore the null hypothesis is accepted.

Table 2: Galadima Primary School Zaki

The null hypothesis is rejected and taking the alternate hypothesis which states that Schistosomiasis has effect on academic performance of primary School pupils and is prevalent in that area.

Table 2: Galadima Primary School zaki

Sex	Number of pupils	Ova detected	Prevalence	Odds ratio	CI	Chi square	P-value
Males	23	9	39.13	0.935	0.300-2.912	0.013	0.908
Females	27	11	40.74	1.069	0.343-3.331	0.013	0.908
Total	50		20		40.00		

Table 3: Central Primary School Sakwa

Sex	Number of pupils	Ova detected	Prevalence	Odds ratio	CI	Chi square	P-value
Males	19	12	63.16	6.171	1.583-24.055	7.409	0.007
Females	23	5	21.74	0.162	0.042	7.409	0.007
Total		42		17		40.48	

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The calculated value (0.007) which is less than the table value (0.5),

DISCUSSION

Prevalence of schistosomiasis among primary School pupils continue to be a major public health problem concern in tropical countries especially in Nigeria. The occurrence of urinary schistosomiasis among primary School pupils cause chronic infection which can affect all aspects of child's health negatively, nutrition and performance in schistosomiasis in childhood cause substantial growth retardation, anaemia, and structural abnormalities of urinary tract. This study was an attempt to investigate the Prevalence of *schistosomahaematobium* among primary School pupils in Zaki local government ,Looking at the three tables (1,2 and 3) above, we can see that two null hypotheses are accepted (Table 1 and 3), reporting that schistosomiasis is not prevalent in Zaki local government of Bauchi State, this is because of the lower infection rate of it (Schistosomiasis) and has no effect on the academic performance of the pupils which are in opposition with the results of Salwa et *al.,* 2016 who reported that Urinary schistosomiasis is prevalent in Kano state of Nigeria.. And only one hypothesis is rejected reporting that Schistosomiasis is prevalent in that area (Zaki), which is consistent with the results of Salwa *et al.,* 2016 in Kano state concluding that Schistosomiasis is prevalent in that area which is due to lack of proper awareness on schistosomiasis, drinking untreated water and exposure to the parasite's habitats, also in Zaki , pupils of age groups 8-11 years are of higher risk of getting infected

In this investigation, males showed higher Prevalence rate than that of females, this is because males expose themselves to the parasite's environment more than the females.

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