Journal of Science, Management and Technology
ISSN (Print): 1597-7463; eISSN (Online): 2811-2598, Volume 6, Issue 1
https://dx.doi.org/10.4314/hpjsmt.v6i1.3

Incidence of *Schistosoma haematobium* Infection Among Patients Attending General Hospitals, Katsina, Nigeria

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ABSTRACT

Assessment of the incidence of Schistosoma haematobium infection among patients attending general hospital Katsina was carried out between the months of March to July 2019. A total of 300 of patients age 5 - 65 years were screened for Schistosoma haematobium eggs in the urine. Centrifuge concentration techniques was used in the analysis of urine samples. A total of 39 (13%) of the urine samples were found to contained Schistosoma haematobium eggs. ui Schistosoma haematobium infection was significantly higher in male 29(16.4%) than in female 10 (8.1%) this is followed by the children aged 11-15 but lower incidence was recorded among age group 16-20 and 21-65 years respectively.

Keywords Schistosomiasis , Centrifuge, Incidence, Schistosoma, Infection, Haematuria

INTRODUCTION

Schistosoma haematobium or blood fluke is a human parasite belonging to the class trematoda and a member of family Schistosomidae. It causes infection called schistosomiasis or bilharziasis named after a German Pathologist Theodore Bilhazy (Bassey and Umar 2004). Urinary schistosomiasis has been known since the time of Egypt Pharaohs. In Nigeria *Schistosoma haematobium* was discovered in Borno province by a German traveler Gustau Nachigal 1881. Its existence in northern Nigeria has been known since and was brought by the invading Fulani from the upper Nile valley which is the center of civilization. Since then, Schistosomiasis became endemic disease in tropical Africa (WHO, 2003). Urinary Schistosomiasis is an important water borne infection second to malaria in socio - economic

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and public health implications WHO (2010). Water snail of Bulinus species is the intermediary host.

Schistosoma haematobium infection present lower abdominal pain irritation when urinating eosinophilia proteinuria and haematuria are some of its clinical symptoms. The infection was found to be higher in children and few adults because of their frequent water contact (Akon, 2011). The infection is associated with poor sanitation and increased development of water resources to meet the demand of mankind (Idris *et al*., 2011). Consequently, the incidence of infection is generally higher among those living near water bodies (Nale *et, al.,* 2003). Schistosomiasis being the public health problem in Nigeria has a national programs for its control. However, such a program has not been sustained due to some factors including unawareness of the public health importance of the disease.The best measures to treat and prevent the disease include chemotherapy, destruction of snail host good waste disposal system and health education

MATERIALS AND METHODS

SPECIMEN COLLECTION

Sterilized universal plastic containers with screw caps that bear identification numbers were given to the patients. They were informed on urine samples collection procedure that include first and the last drop of urine for analysis. The samples were collected between 12:00 noon - 3:00 pm because *Schistosoma haematobium* excretes more eggs during this time Cheesbrough 2010).

URINE ANALYSIS

Macroscopic analysis

The appearance of urine samples in term of color such as reddish, reddish - brown, brownish, yellow, amber and cloudy were taken into consideration.

Microscopic analysis

The urine analysis was carried out using Centrifugation techniques as described by (Idris *et al.*, 2001). The urine collected was shaken and 10 ml was centrifuged at 2000 rpm for 5 minutes at room temperature . After decanting the supernatant, a drop of the sediment was placed on a slide and covered with a cover slip and a drop of iodine was added and observed under 10x objective.

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RESULTS

In this study a total of 39 positive patients were found from the 300 urine samples examined. The incidence of *Schistosoma haematobium* infection is found to be higher among children age 11-15 followed by 6-10 age group but lower among age group 21-65 as depicted by the figure1 below;

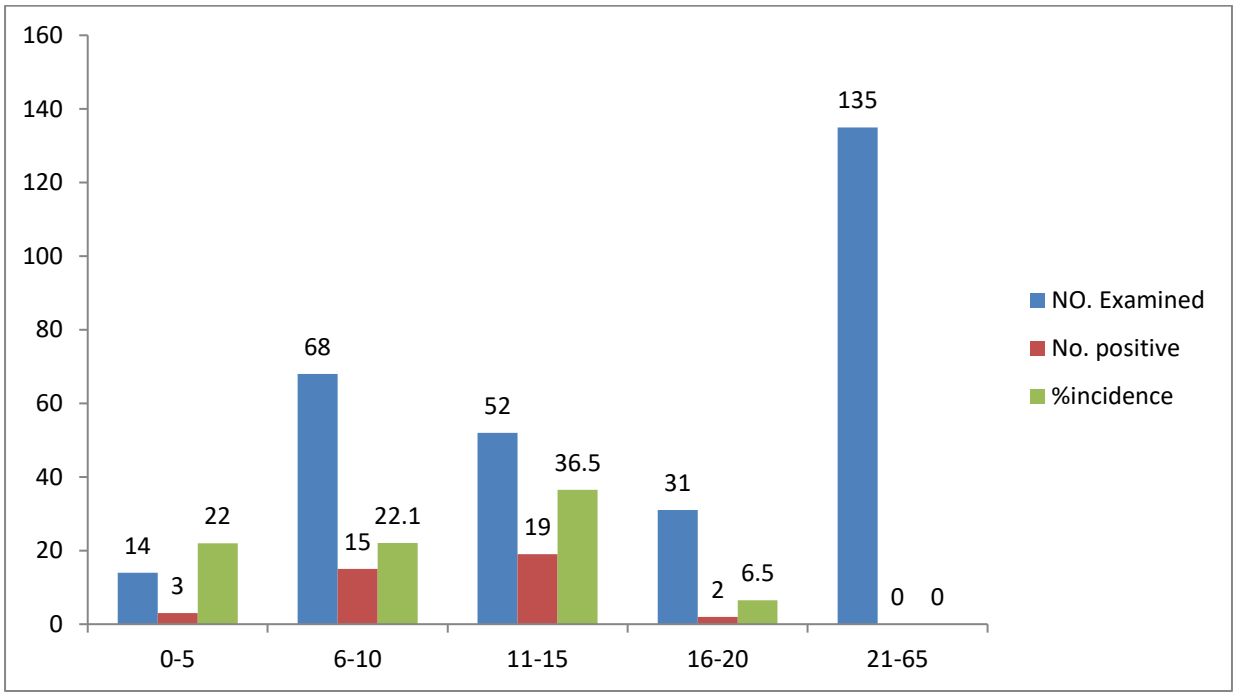

Figure 1 : show the incidence of *Schistosoma haematobium* with respect to age of the study group.

The incidence was observed to be higher in male than the female counterparts as shown by figure 2 below;

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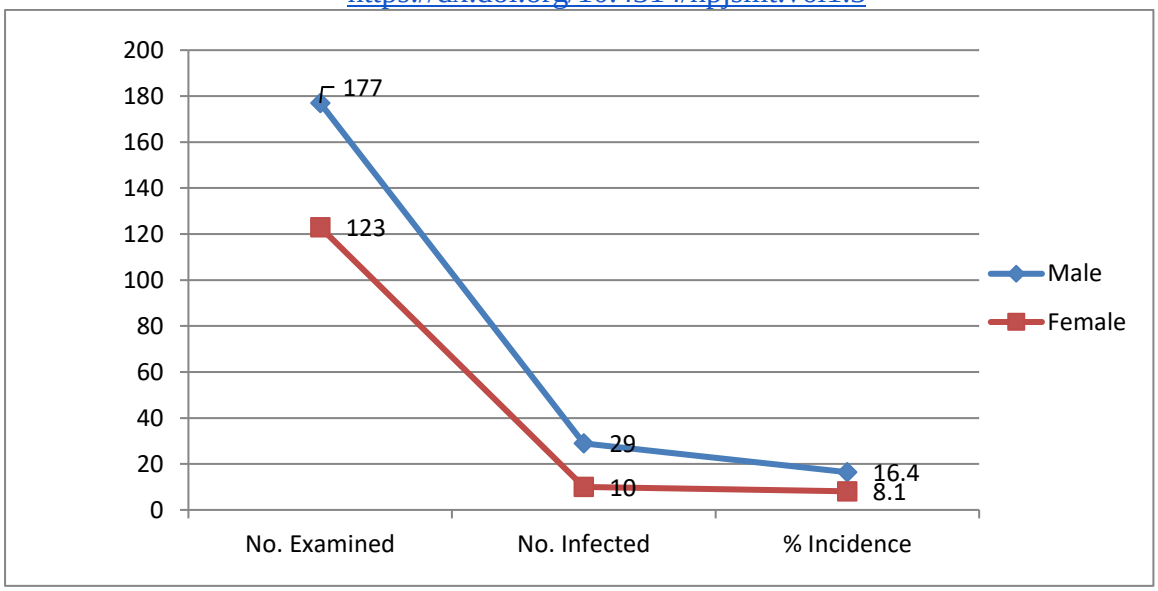

Figure 2; Shows the incidence *of Schistosoma haematobium* **with respect to gender.**

The incidence of *Schistosoma haematobium* was higher among fishers and farmers but lower among traders as depict by fugure 3 below.

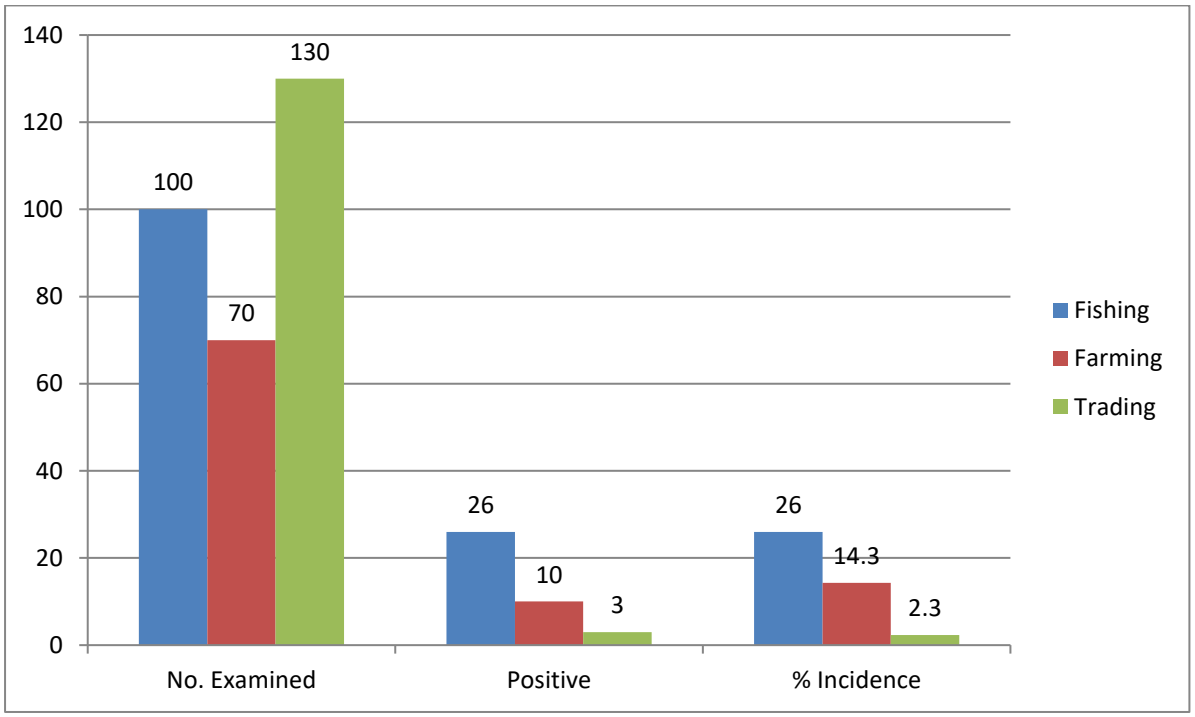

Figure 3 ; Show the incidence *Schistosoma haematobium* **with respect to occupation.**

Schistosoma infection is common among people using dam water followed by people using pond water and least was seen among people using tap water as shown by figure 3 below ;

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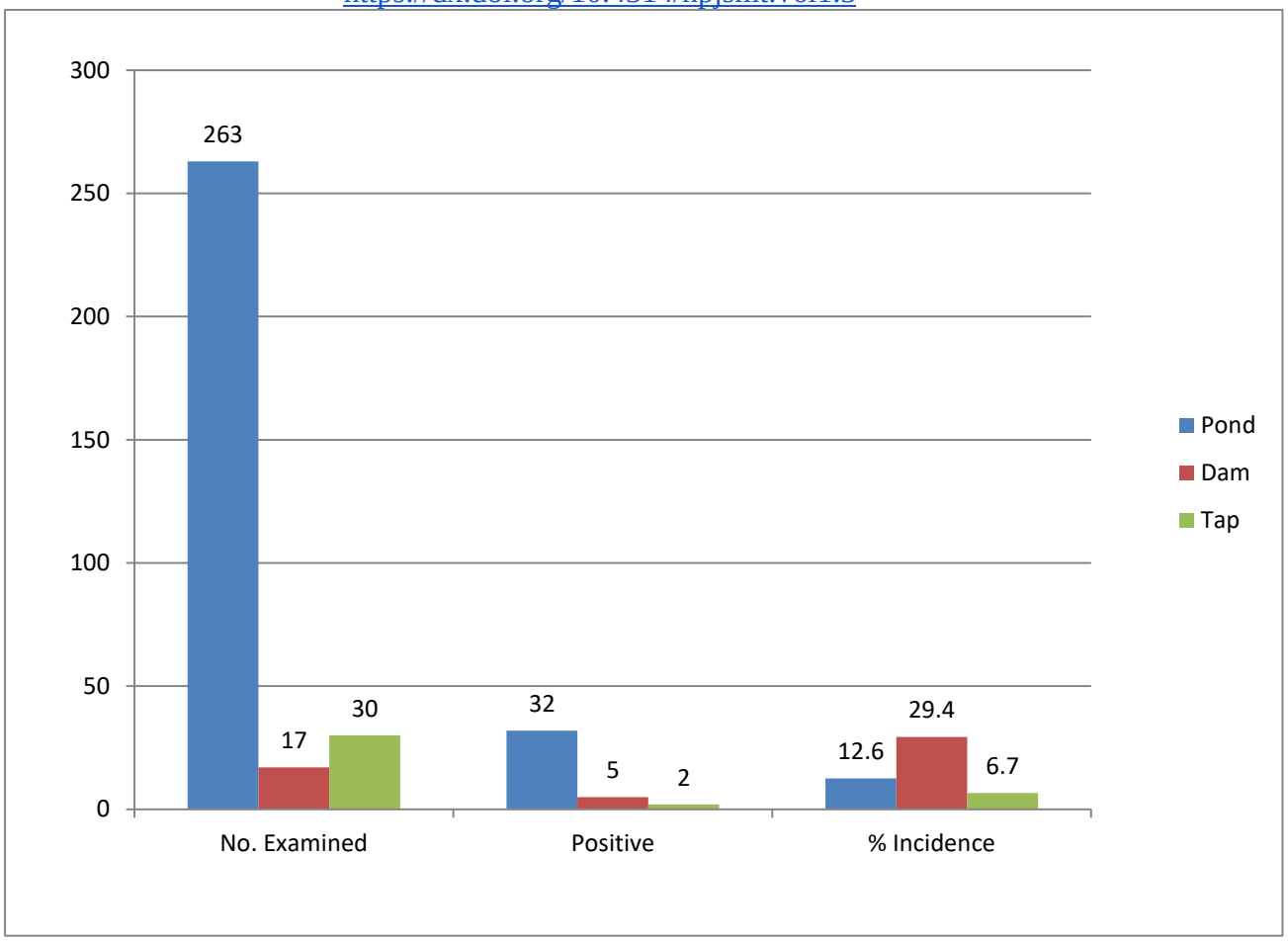

Figure 4 ; Shows the incidence *Shistosoma haematobium* **with respect to sources of drinking water.**

DISCUSSION

The incidence of *Schistosoma haematobium* is higher among children age groups 11-15 19(36.5) but lower among age group 21-65 years this is similar to the findings of (Idris *et, al.* 20011) who reported similar incidence in study conducted in South Western Nigeria. The reason for the higher incidence among children age group 11-15 is presumably due to weaker immune system in children as compared to adult (Sulyman *et al.*, 2009). *Schistosoma haematobium* infections manifest more in children than the adult .

The incidence of *Schistosoma haematobium* is significantly higher in males 29 (16.4%) than their female counterparts 10 (8.1%). This is in line with Bassey and Umar (2004) who reported 16% similar incidence rate of Schistosoma infection from urine specimens of patients with bilhaziasis from Garun - Babba and Kura, Kano.State.The reason for the higher incidence among males is due to frequent water contact activities by males especially swimming in cercaride infested water bodies. In addition, females are generally hindered from engaging these activities by social, cultural or religious background (Kiran *et al.*, 2016).

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The results also reveal that the incidence was higher among fishermen and farmers but lower among traders. This is similar to the finding of Kiran *et al.*, (2016).This higher incidences seen among fishers and farmers may be associated with the nature of their occupation that involved frequent water contact as snail host require water for survival.

Incidence was higher among people using Dam water 5 (29.4%) followed by people using pond water 32 (12.6%) but lower among people using tap water. This is similar to 11% incidence reported by (Sulyman *et al.* , 2009). This higher incidence seen among people using dam and pond as their water sources may be attributed to preference shown by snails host for stagnant water bodies over running water but the lower incidence seen among people using tap water may be associated with hygienic qualities of the tap water over the pond and dam water bodies.

Conclusion

This study revealed the presence of *Schistosoma haemabium* in Katsina metropolis. The incidence recorded was higher among children age group 11-15 . This incidence may not represent true incidence of Schistosoma infection in the area because only patients attending general hospital Katsina were screened so other researchers have to be conducted.

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