

# Urinary Schistosomiasis in Ghana: resurgence in Urban and Peri-Urban Settlements

By

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# Introduction

Schistosomiasis is the second most prevalent tropical parasitic disease after malaria, affecting about 200-300 million people world-wide.

5-6 million people are at risk and this has mainly been associated with river basin projects.

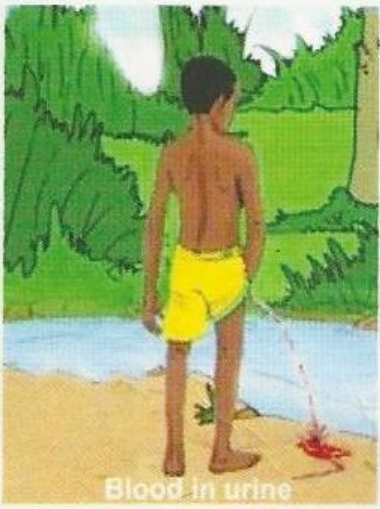
In Ghana, Schistosomiasis is a major water borne parasitic disease associated with poverty in most rural settings. The disease is widespread and occurs in all 170 administrative districts of Ghana.

The transmission of the disease occurs in urban poor, and peri-urban communities. Prevalence rates are high, over 90% in many endemic communities.

## **Pathological Effects**

It is estimated that about 7 million school-age children in Ghana are at risk of infection. Schistosomiasis infected people suffer many health conditions including excretion of blood in urine and stool, kidney malfunction, bladder cancer and diseases of the liver and spleen.

- **Infertility ,miscarriage, ectopic pregnancies, erectile dysfunction**
- **and increased risk of acquiring sexually transmitted infections including HIV/AIDS.**



Blood in urine



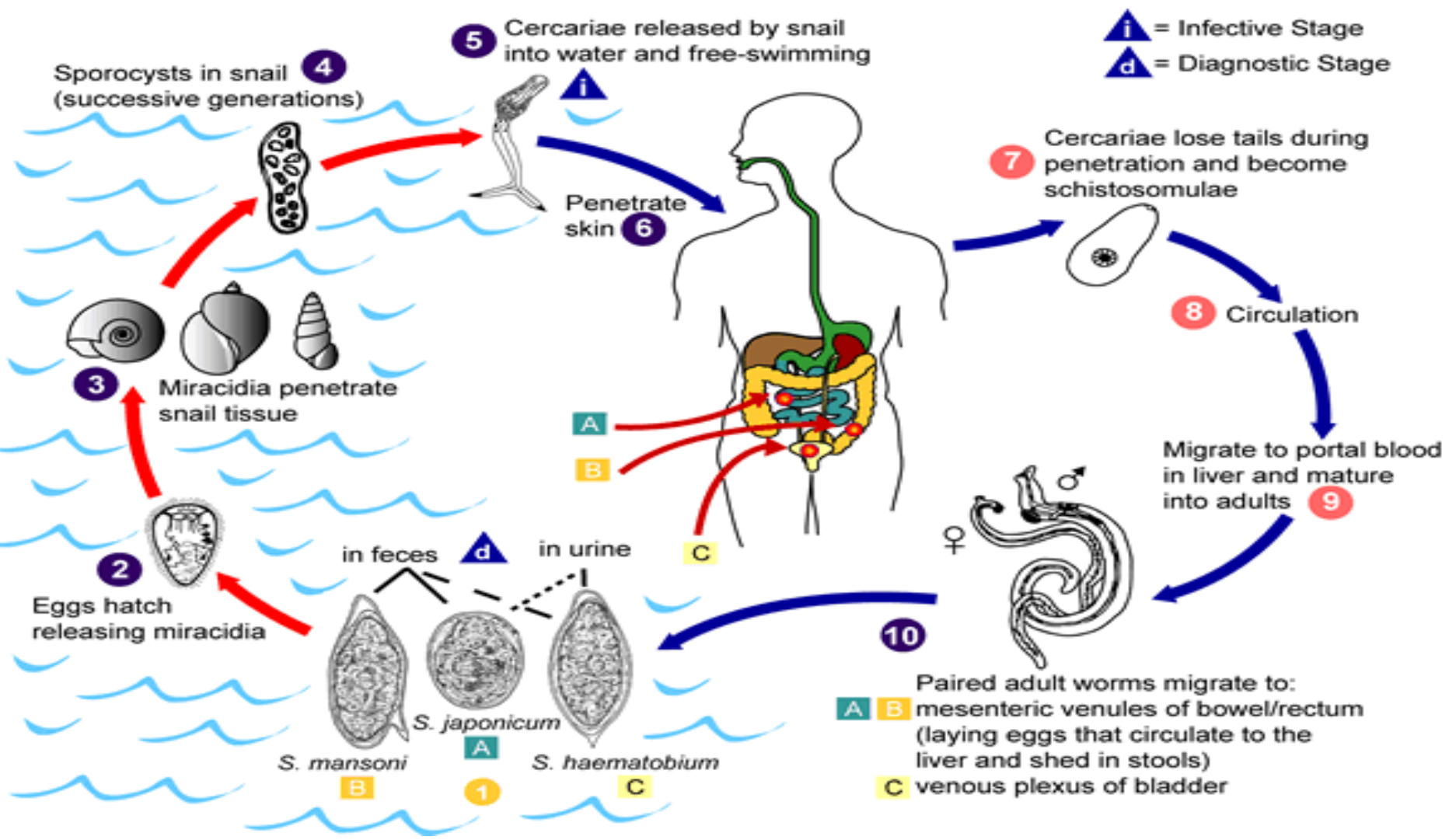
Male and Female Schistosomes



Enlarged abdomen



# Climate, Life Cycle and Epidemiology



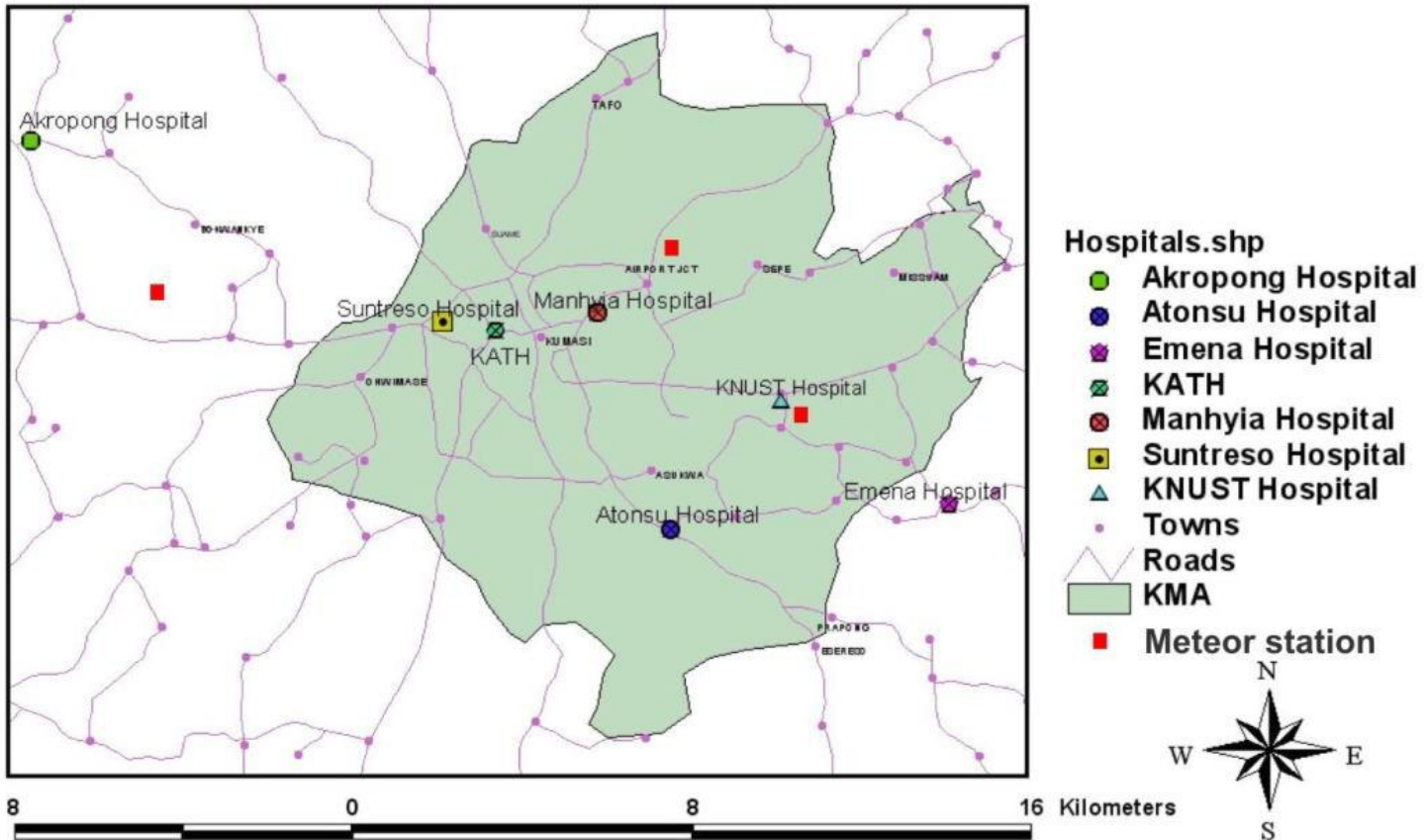
# Methodology

- two health facilities in the Kumasi Metropolis were retrospectively assessed for the prevalence of *S.haematobium* infection to determine the extent of public health education about the disease in the urban setting

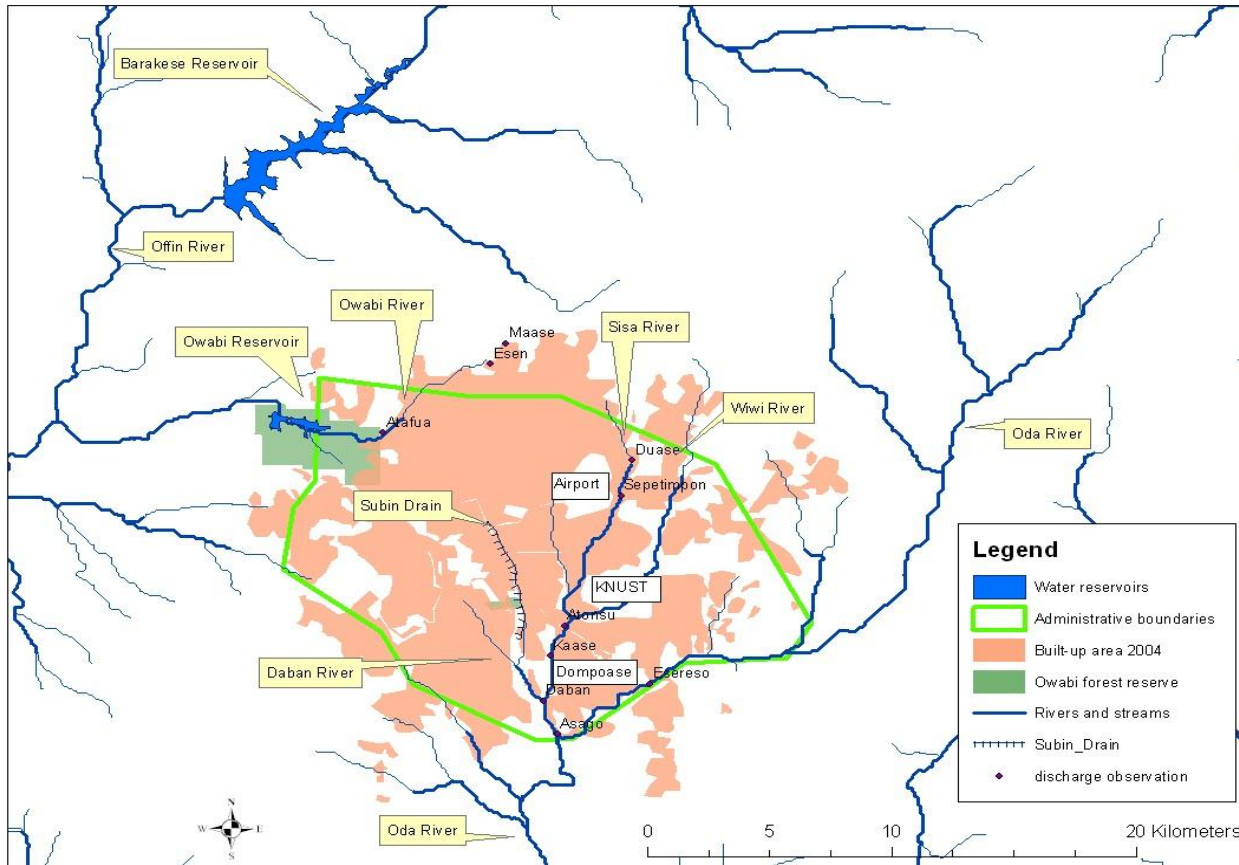


# Map

## Map Showing Study Sites

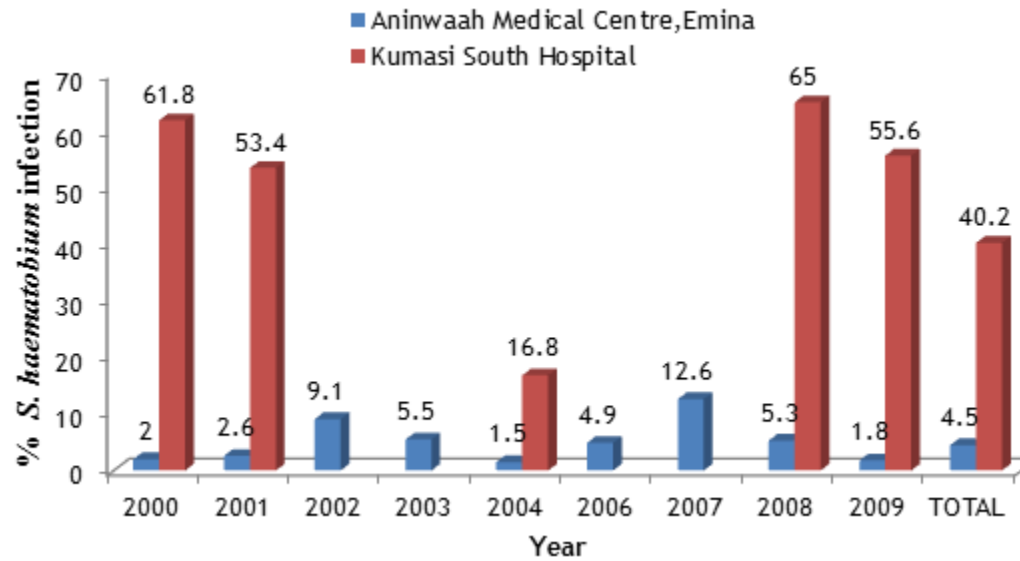


# Map

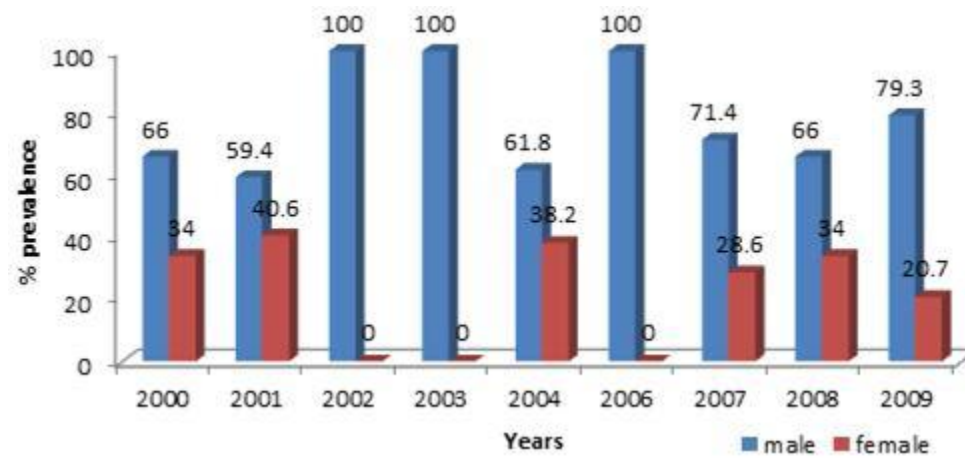




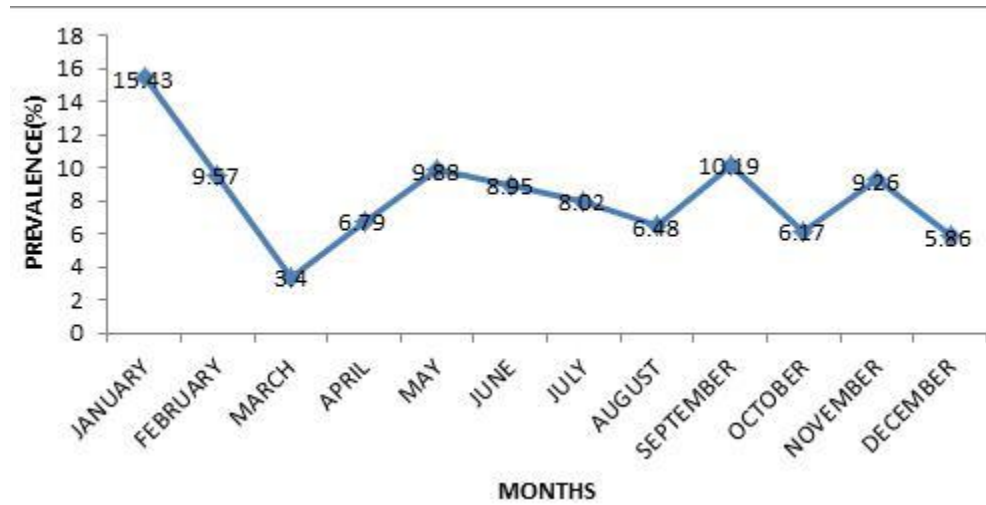
# Results



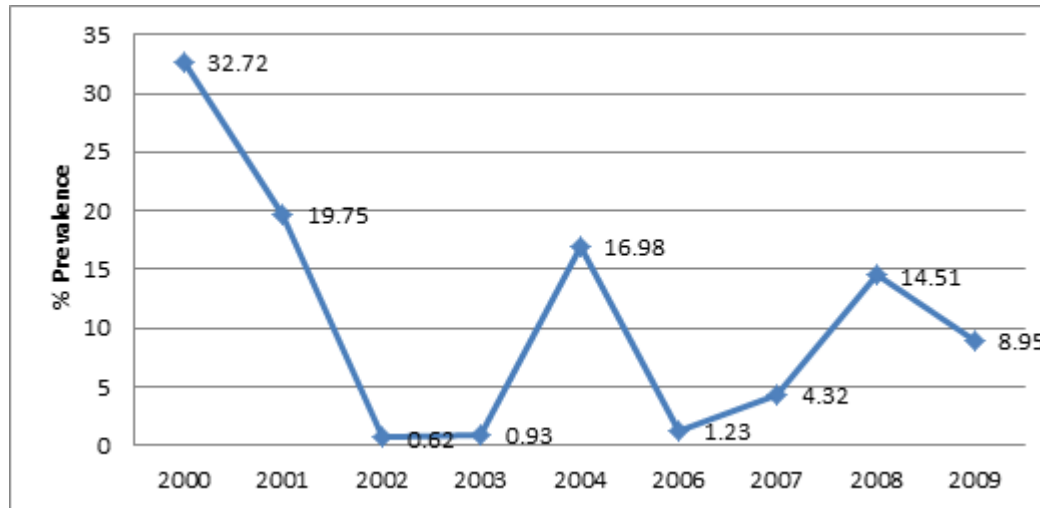
# Results



# Results



# Results



# Discussion contd.

- The major rainy seasons in Ashanti Region run from April to June with the infection prevalence ranging between 6.8% and 9.0%. The minor rainy seasons also runs from November to February with prevalence ranging from 5.9% to 15.4%. Rainfall is associated with the distribution of snail species [20]
- The abundant aquatic weed that develops during the raining seasons serves as readily available food for the snails

# Discussion contd.

- The *Bulinus* species therefore reproduce extensively in the raining season and by the beginning of the dry season where there is increased human activity with these fresh water bodies, these freshwater snails become infected with the miracidium which develop into the infective cercariae and upon release penetrate the skin of individuals who come into contact with the infested water [20]. In our study, this appears to account for the increase in the infections in the dry and minor rainy seasons as compared to the major rainy season



# Discussion contd.

- There was yearly trend of *S. haematobium* infection during the period under review. This has shown that after every three years, prevalence of *S. haematobium* infection increases with peaks values of 32.7%, 17.0 % and 14.5 as observed in 2000, 2004 and 2008 respectively. This has also shown that the prevalence rates in these years were declining over time

# Discussion contd.

- Higher prevalence of the infection was recorded among males than females. This is probably due to increase contact with infected water bodies by males than female as result of engagement in swimming and or agriculture activities. Nsowah-Nuamah *et al.* [9] also reported high rates of the infection among males (55.9%) than the female counterparts (3.7%)
- Chimbari and Chirundu [17] conducted a similar study in Zimbabwe which also revealed higher infection rates among males than the females

# Discussion contd.

- These observations are expected considering the fact that some socio-cultural practices such as farming, fishing and recreational activities expose males to infected water bodies than the female counterparts [18,19]

# Discussion contd.

- the presence of good household water may have contributed to the differences in the prevalence rates of schistosomiasis recorded in the two hospitals
- the result of this study is consistent with reports by Yeboah [13] and Clennon *et al.* [14] suggesting that proximity of household to infected water bodies is significant in the transmission of *S. haematobium* infection
- increase contact time of the infested water bodies by people around Kumasi South Hospital might also have accounted for the high prevalence of the infections in these communities compared with the communities around Aninwaah Medical Centre [15,16]

# Conclusion

- The prevalence of *S. haematobium* infection over the past ten years was 20.7% at both health facilities with Kumasi South Hospital recording higher prevalence than Aninwaah Medical Centre
- *S. haematobium* infection was predominant among males patients than in females
- The results obtained from both hospitals indicate variations.
- There was a general three-year pattern of *S. haematobium* peaks of infection during the period under review with infection occurring throughout the year, hence the need for intervention

# Conclusion contd.

- This present study has demonstrated that *S. haematobium* in these study sites showed a three-year seasonal pattern of major increase with time. This may be due to increase in survival of the snail intermediate host in favourable environment after every three years [17]
- thus, results obtained from both hospitals in this present study shows that the prevalence of *S. haematobium* infection is seasonal



# Recommendations

- need for future prospective studies of residents in these communities, to examine the impact of climate variability on schistosomiasis in these communities so as to develop an integrated programme to control and eradicate schistosomiasis in these communities and other communities in Ghana.
- health education
- water sanitation
- private and public toilets and communal laundry
- mass chemotherapy as a means to control morbidity in endemic areas

# Recommendations contd.

- Results further suggest the design of programme for control of schistosomiasis in community study sites based on prophylactic treatment during the dry season with praziquatel to control the morbidity associated with infection

**THANK YOU!**