



CHAPTER 2

REVIEW OF RELATED LITERATURES

Guyatt and Evans (1992) argued that various studies have attempted to measure the economic consequences associated with Schistosomiasis but the results have been inconsistent to show the relationship between infection and a reduction in either total labour input or labour productivity. The authors went further to suggest that, this could be due to the fact that studies have not considered the intensity of infection or because they have concentrated on wage labourers who would not have been employed if they exhibit signs of illness.

2.1 ECONOMIC COST

One retrospective study conducted in 1992 to estimate the socio economic effects of Schistosomiasis in Tanzania mainland, Rugemalila (1992) reported that, direct cost of an uncomplicated case of Schistosomiasis was US\$ 16.75 and for a complicated case US \$ 552.3. The study did not go further to analyze the effects on the opportunity cost of time lost due to sickness, labour productivity or school performance of children.

Wright (1968) attempted to estimate the economic impact of Schistosomiasis from the point of view of macroeconomic level. From his approach, he estimated global distribution of economic loss resulted from decreased productive capacity. The author found that, African continent had a loss worth US 445,866,945 , in Mauritius US 755,480 in South West Asia US 16,527,275 in South East Asia US 118,143,675 and US 60,496,755 for the Americas.

The total estimated annual world loss amounts to US\$ 641,790,130 but this sum does not include the cost of public health programmes, medical care, or compensation for illness. However, in order to make such a world wide estimate of economic loss from a decreased capacity for production Wright (1968) adopted per capita GNP in US dollars as a common denominator.

2.2 SCHOOL PERFORMANCE

Schistosomiasis and other helminth diseases such as *A. lumbricoides*, *Trichuris trichiura*, and hookworm

have been evidenced can lead to growth stunting and can restrict the educational performance of children, Guyatt and Evans (1992). This would clearly affect the longer term economic performance of individuals and may be society at large. Studies conducted in Tanzania and Zimbabwe in different years had produced different results. In his paper, Tanner (1989) reveals that, the study in Zimbabwe concluded that Schistosomiasis affects school performance of children, whereas a study in Tanzania was inconclusive.

2.3 LABOUR PRODUCTIVITY

Fenwick and Figenschou (1972) studied the economic impact of *Schistosoma mansoni* infection among cane cutters in Tanzania who were employed in a sugar estate. The focus was on their productivity, to cut sugar canes at the time they are infected and during the period they are free from infection. The parameter selected to measure labour productivity was total bonus earnings for each cane cutter. Bonuses were paid to men who cut more than a certain minimum amount of cane set by the estate administration. It was found that, total bonus earnings for uninfected can cutters was higher than that of infected can cutters. In 1968 mean bonus earnings for uninfected men was US\$ 68.31 whereas that of infected men was US\$ 59.97, implying a percentage difference of 13.9. For the year 1969 the mean bonus earnings was US\$ 70.33 and 63.23 respectively. In both years the difference in earnings was tested statistically significant.

The following are some of the notable features of previous other studies as discussed by Tanner (1989). (i) Many preceded studies have concentrated on an individual as a unit of analysis instead of household or community at large. This is important level of analysis if a researcher wants to explore the effects of the disease to the society, hence to justify to the government the importance of initiating a control programme. (ii) Labour productivity have been measured on market products only and non market products were ignored. This means subsistence farming one of the dominant features of rural economic characteristics is not reflected. (iii) No study has measured the economic costs on households (iv) They used different research methods and get different results even with the same species of Schistosome, thus results are inconclusive and can not be generalized.

For instance, On assessing effects on labour productivity for *s.mansoni* Tanner (1989) argues that a study undertaken in St. Lucia was inconclusive whereas, the one in Brazil found that *S.mansoni* had effects on labour productivity. However, the author had an opinion that these differences are due to the variation in morbidity pattern in study areas.

Table 2.1 List of Previous studies:

PARASITE	IMPACT	STUDY TYPE	COUNTRY
S. haematobium	School performance (NO)	Descriptive cross. (1948)	ZIMBABWE
S. haematobium	School performance (YES/NO)	Cohort (1954)	TANZANIA
S. Mansoni	Labour productivity (YES)	Cohort (1954)	BRAZIL
S. Mansoni	Labour Productivity (YES/NO)	Descript.cross /Cohort (1974)	ST. LUCIA
S. Japonicum	Labour productivity (YES/NO)	Descript.cross /Cohort (1971)	CHINA

SOURCE: TANNER M. (1989)

In this research paper, focus of analysis has been changed so as to incorporate some of the weaknesses of preceded studies. In the first attempt, unit of analysis has been directed towards rural households rather than individuals as most studies have concentrated on. This is important because the aim is to show the government the magnitude of the burden of the disease to the community at large.

Also in most developing countries, rural community is mostly vulnerable of poor sanitation and other infrastructural services, which are major reasons for schistosomiasis existence. Probably most important is that rural households engages in subsistence agricultural activities, with small scale farms as well as low level of technology. This creates more complex

situation of analysis on productivity loss unlike the case whereby a wage labour earner is observed for his productivity.