

**DIAGNOSIS BEFORE ACTION: A KAP SURVEY AS BASE LINE
FOR A SCmSTOSOMIASIS CONTROL PILOT PROJECT
IN KEMISE, WOLLO ADMINISTRATIVE REGION**

Elias Gebre-Egziabher,1 B.Sc., M.P .H.

ABSTRACT

Findings from a KAP survey as base line for a schistosomiasis control pilot project is reported. illustrating elements of major concern in socio-economic and behavioural areas. The findings show that 50% of the respondents have been informed about schistosomiasis but only 49% of those informed recognized it as a disease of any severity. Only 5% acknowledged the presence of a person suffering from schistosomiasis in their household and only half of them took the patient for modern medical care. Laundering was found to be one of the most common ways of contact with rivers (60%). followed by bathing (27%). More than a quarter of the respondents have also admitted to the use of the rivers (85%) as well as the protected well. as may be convenient. Most of the respondents use the morning hours for water contact.

As far as excretion practices are concerned. 63% of the adults and 50% of the youngsters use latrines. while the rest use the backyard or other open-fields. The large majority (73%) were willing to participate in the control of schistosomiasis. Finally. the need to consider seriously excreta disposal practices. water contact pattern. utilization of available health services. knowledge and attitude with regard to schistosomiasis is discussed.

INTRODUCTION

Making an appropriate community diagnosis is an important precondition for the success in the planning, implementation and evaluation of communicable disease control programmes. It is clear that such a diagnosis must have a multi disciplinary facet in order to consider adequately most of the factors influencing the causes, transmissions, prevention and treatment of a disease. It is, therefore, necessary to consider the socio economic aspects of a community along with implementation with clinical and epidemiological communicable order to develop an effective control programme for communicable diseases. However, human aspects are often neglected to or inadequately treated in many such programmes (1,2)

¹ Department of Community Health Faculty of Medicine, Addis Ababa University
P.O. Box 1176, Addis Ababa, Ethiopia .

Therefore, it will be helpful to look into the human behavioural component in schistosomiasis control since man is the principal reservoir of both *S. mansoni* and *S. haematobium* (the two species prevalent in Ethiopia). Human excretion practices are contaminative activities determining the level of infection of the intermediate host (*Biomphalaria pfeifferi* snails) with miracidium. Similarly, the life style of the community with regard to exposure activities to infected body of water also plays an important role in influencing the rate of human infection and consequently the intensity of disease transmission. Hence, both Transmission control of the biological cycle and disease control in the human population need to be analysed (3,4,5).

Accordingly, the level of knowledge, attitudes and practices relevant to schistosomiasis were considered as essential pre-requisites for the planning, implementation and evaluation of the Kemisse Schistosomiasis Control Pilot Project, as these indicate, the area where major emphasis has to be made. The Kemisse Schistosomiasis Control Pilot Project, being implemented by the Institute of Pathobiology of the Addis Ababa University, is multidisciplinary, and the findings of a KAP study conducted as part of the community diagnosis (base line data) for the pilot project (6) is reported here.

THE SETTING

Kemisse is a road-side town on the main highway from Addis Ababa to Dessie, 325 Km north of Addis Ababa, located in the region of Wollo, Kalu Awraja and Esseye Gola Woreda. The town has a population of 5200, according to the 1983 project census, and is organized in to two urban dwellers associations which together form a special higher urban dwellers' association responsible for the administration of the town. There are also two youth, two womens and a workers' associations. The town has an elementary school, a junior secondary school, a health centre, a central well water supply (which is reported to be salty by the community) with two distribution taps, a fuel generated electric line giving service for half the night, a telephone line and a post office. It has a regional market which attracts merchants and buyers from far away places. Two streams bypass the town on the north eastern and southwestern edges, both of which have been ascertained to be sources of schistosoma infection (7).

METHODS AND MATERIALS

A systematic sampling technique was used to interview every fifth household in each of the two Kebele Urban Dwellers' Associations. House numbers assigned to each house by the project for census taking and subsequent follow-up studies were used to identify the sample population. A questionnaire was designed seeking information on:

- (1) general background of the interviewee (age, sex, relations to the head of the household, occupation, educational status, period of residency);
- (2) general outlook on health and disease (causes, communicability and preventability of disease);
- (3) practices related to excreta disposal (availability and use of latrines, etc.);
- (4) source of water for home use (piped supply, rivers, others);
- (5) patterns of contact by household members with the rivers of the town (time, frequency, purpose);
- (6) knowledge and attitude in relation to schistosomiasis (cases of infected persons in household, if

any, actions taken, perceived means of transmission of the disease, possible ways of prevention, source of guidance, preparedness for participation in schistosomiasis control activities).

The questions were open ended allowing the respondents to explain in their own terms and to elaborate their views and feelings. The relevant findings were then categorized by the interviewer into the appropriate choice of answers provided on the questionnaire. The questionnaire was explained and discussed in the presence of all interviewers in order to create a common basis for understanding for both the questions and the alternative answers provided. As a result of the discussion of the questionnaire with the interviewees, other categories were added to allow registration of responses which may not neatly fall into the choice of answers provided in the questionnaire.

One adult member in each of the sample households, preferably head of the household or his wife were interviewed. Accordingly, 216 people were interviewed, 54% of whom were head of households, percent of the respondents claimed that they did not know what causes illness, 13% related it to magic religious supernatural influences while 34% attributed it to some sort of environmental factors.

-Among those who mentioned environment as a cause of illness, 67% were aware of communicability of some diseases, 9% were not definite and the rest (24%) thought that diseases are not communicable.

-Among those who acknowledged that diseases could be communicable, 83% mentioned contact with a sick person as a means of transmission, while 57% mentioned contaminated food or drink, 37% referred to animal bite and skin penetration of the bite, 21% mentioned contact with sick animals and 29% made reference to air and soil.

- An attempt to find out from whom advice about health problems was sought revealed that 43% sought advice from health centre staff, 54% did not seek advice from anyone and only 3% mentioned neighbours.

Knowledge and Attitude in Relation to Schistosomiasis (Table 1)

Table 1: Knowledge and Attitude in regard to Schistosomiasis, Kemisse town Wollo Administrative Region, 1983

Knowledge/ Attitude	Yes		No		Total	
	No	%	No	%	No	%
1. Level of awareness about schistosomiasis	108	50.0	108	50.0	216	100
2. Perception of schistosomiasis as a threat to oneself	93	43.1	123	56.9	216	100
3. Knowledge about schistosomiasis infested body of water as source of infection	108	50.0	108	50.0	216	100
4. Perception of severity of schistosomiasis	53	24.5	163	75.5	216	100
5. Understanding of prevention and control of schistosomiasis	64	29.5	152	70.4	216	100
6. Perception of the use of modern health care to treat schistosomiasis	86	39.8	130	60.2	216	100

7. Perception of the importance early diagnosis and treatment	80	37.0	136	63.0	216	100
8. Recall of a correct method of prevention or control of schistosomiasis	64	29.0	152	70.4	216	100
9. Willingness to participate in control activities	158	73.1	58	26.9	216	100
10. Recognition of a schistosomiasis, case in the households	12	5.5	204	94.5	216	100

-Half of the 216 respondents were reportedly informed about schistosomiasis as a disease related to water;
However, only 43% recognized the disease as a perceived threat to them selves.

-Among the respondents, only 24.5% perceived schistosomiasis as a severe disease of concern, 29.6% said that it can be prevented or controlled and mentioned some appropriate measures and 39.8% said that they would take anyone suffering from the disease to the nearest health service unit.

-73% of the respondents expressed willingness to participate in control activities, 8% said they were not interested and the remaining 19% did not decide either way. Among those interested in participating in the control of the disease, 28% preferred the weekends for any community activity, but 55% did not have any preferred particular day. Instead, 60% said that the morning hours were more suitable.

Human practices related to schistosomiasis

-Only 5.5% of the respondents admitted the presence of a person in their household suffering from the disease among whom, 50% had gone to the health center; 8.3% to traditional herbs at home and the remaining 25% did not take any action.

-With regard to sources of water for domestic utilization, the rivers were used by 88.9% of the households for laundering, by 54.6% for bathing, by 37.5% for drinking and cooking. On the other hand, the protected well was used by 62.5% for drinking and cooking, by 45.4% for bathing and by 11% for laundering (Table 2).

-In an attempt to learn about the usual time of day during which they came into contact with water, it was found out that 33% did not have any regular pattern and went to the river as deemed necessary and convenient, 32% went only in the morning hours, 23% went twice a day, in the mornings and evenings, while the remaining 2% and 1% said they would go once in the evening and every other day, respectively. However, when further questioned, most of the respondents claimed to use the morning hours while a significant number did not have any regular pattern (Table 3).

-Further questioning on frequency of visits made to any water source (river or well), it was revealed that 17% went once, 64% twice, 7% three times, 2% four times, 1% five times daily and the remaining 9% claimed not to go at all.

-As far as human excretion practices are concerned, 63.4% of the adults and 49.5% of the youngsters used latrines while 36.6% of the adults and 50.5% of the youngsters used the backyard, open fields or other improper places and 1.4% of the adults and 0.5% of the youngsters mentioned the banks of the rivers as defecation sites (Table 4).

Table 2: Source of water for domestic utilization by residents of Kemisse town, Wollo Administrative Region, 1983

Purpose	SOURCE			
	River		Protected well	
	No.	%	No.	%
1. Drinking/Cooking	81	37.5	135	62.5
2. Laundering	132	88.9	24	11.1
3. Bathing	118	54.6	98	45.5
4. Prayer	10	4.6	17	7.9

Table 3: Pattern of time for water contact by residents of Kemisse town, Wollo Administrative Region, 1983

Purpose	Time of Day for Water Contact			
	5-11A.M.	12-2P.M.	2-6P.M.	Not specified
1. Collecting water	151 (69.9%)	Nil	2 (0.9%)	63 (29.2%)
2. Bathing	105 (48.6%)	7 (3.2%)	4 (1.9%)	100 (46.3%)
3. Laundering	156 (72.3%)	8 (3.7%)	1 (0.5%)	51 (23.6%)
4. Swimming	2 (0.9%)	nil	nil	nil
5. Irrigation work	2 (0.9%)	nil	nil	nil

Table 4: Human excretion practices by residents of Kemisse town, Wollo Administration Region, 1983

Excreta disposal sites	Adults				Youngster			
	Male		Female		Male		Female	
	No.	%	No.	%	No.	%	No.	%
1. Household Private latrine	131	60.7	130	60.2	105	48.6	104	48.2
2. Neighbourhood latrine	8	3.7	6	2.8	3	1.4	3	1.4
3. Backyard	6	2.8	9	4.2	15	11.6	27	12.5
4. Open field	50	23.2	52	24.1	51	23.6	49	22.7
5. River side	3	1.4	3	1.4	1	0.5	7	0.5
6. Other places	18	8.3	16	7.4	31	14.4	32	14.8

Table. Age and Sex Distribution of Persons Reporting Illness

Age (years)	Number of Persons in each age/sex group		Number and % of persons ill		Number and % of persons ill	Ratio of Male/Female illness (A÷B)
	Male	Female	(A) Male	(B) Female		
< 1	28	35	13(46.4)*	6(17.1)	19(30.2)	2.71
1-4	106	127	25(23.6)	23(18.1)	48(20.6)	1.30
5-14	261	277	18(6.9)	18(6.5)	36(6.7)	1.06
15-24	89	152	7(7.9)	20(13.2)	27(11.2)	0.59
25-44	128	230	14(10.9)	59(25.7)	73(20.4)	0.42
45	99	121	16(16.1)	68(6.2)	84(38.2)	0.28
65	24	33	9(37.5)	14(42.4)	23(40.4)	0.88
Total	735	975	102(6.0)	208(12.1)	310(18.1)	0.48

DISCUSSIONS AND CONCLUSIONS

Even though the literacy rate is high and half of the respondents claimed to have been informed about schistosomiasis, their knowledge, attitude and practice needed much improvement.

Excreta Disposal practices

Despite the fact that 63% of adults and 50% of youngsters reported the use of latrines, the practice of using backyards and open fields was high, and necessitates special attention to increase the availability of latrines and to promote their appropriate use as an important component of the schistosomiasis control pilot project (4).

Water contact pattern

The most common purpose of contact with the rivers was found to be that of laundering and bathing activities which tend to create more body exposure for a longer time than drawing water for home use. In addition to the need for safe water supply for drinking and cooking, the need for alternative safe laundering and bathing facilities are highly evident as this will reduce contact with the rivers as was the case in St. Lucia (8). It was also noted that the usual time for bathing and laundering was the morning hours unlike the findings in Tensae Berhan (9). Meanwhile, the promotion of the preventive behaviour of using the river in the early mornings is recognized to be important. This is because shedding of cercariae from the intermediate host (snail) becomes high, increasing the rate of infectivity, with the rising temperature, usually from 11:00 a.m. to 3:00 p.m. as shown in the study around lake Tana (10).

Utilization of available health services

Even among the small proportion who acknowledge the presence of a person suffering from schistosomiasis in their household, only 50% took the patient for medical care. This is despite the fact that there is a health centre in the town of Kemisse itself, where the respondents reside. Hence, educational efforts should be made to increase the appropriate use of the available health service.

Knowledge and attitude with regard to schistosomiasis The respondents did not have a clear idea of the possible causes of ill-health, probable sources of infection, transmissibility of communicable diseases, and as a result they underestimated the risk of being infected by schistosomiasis and/or that such an infection would have any significant consequences. Prevention of disease was not an important concern, even though most of those who accepted the possibility that diseases may be transmitted, mentioned other ways of prevention. Therefore, the planning, development and implementation of a proper health education programme is believed to be one of the most essential components in the control programme (11).

Community involvement

The large majority of the respondents indicated interest in taking an active part in controlling schistosomiasis; such a high level community motivation is an asset which needs to be adequately tapped further. Thus, mobilization of residents under the leadership of their own committees established for this specific responsibility is considered very important (12).

Finally, it must be stressed again that as a precondition for planning the control of schistosomiasis or other diseases, one should find out the socio-economic and behavioural patterns of the

population under consideration as a basis for the planning and effective implementation of the programme of control. Thus, considerations of all factors that influence the planning and implementation, including the active involvement of such communities in all aspects and/or all stages of the programme must be given high priority in the efforts to control schistosomiasis or other communicable diseases (13).

ACKNOWLEDGEMENT

The author would like to thank the Institute of Pathobiology for providing financial and technical support from the World Health Organization grant (TDR/ RSG). The author also wishes to thank all the participants in the baseline survey for their help in conducting the interview. Special thanks goes to Ato Tuffa Abate, statistician of the Institute of Pathobiology, for his assistance in the tiresome job of manually compiling the data. The author is also grateful to his colleagues involved in several aspects of the control research for their continued support and encouragement both in the field study and during the writing of this article, among whom special thanks go to Dr. Tekle Mariam Ayele, Dr. Getachew Tilahun, Dr. C.T. Lo and Ato Hailu Birre, all of the Institute of Pathobiology, and to Dr. Tesfa Micahel Tesfa-Mariam of the Faculty of Medicine, Addis Ababa University.

REFERENCES

1. ACMR focuses on research in human behaviour, World Health Chronicle. WHO, Geneva, Vol. 35, Jan. 1981.
2. Dalton, P. R. A Socio-ecological approach to the control of schistosoma mansoni in Saint Lucia. Bulletin of the World Health Organization. Geneva, Vol. 54, 1976.
3. K100S, H. et al. Haematobium schistosomiasis among seminomadic and agricultural Mar in Ethiopia. Tropical and Geographical Medicine. Vol. 29, 1977.
4. Epidemiology and Control of Schistosomiasis, report of a WHO Expert Committee. Technical Report Series. Geneva, No. 634, 1980.
5. Lemma, A., et al. The epidemiology of Schistosoma mansoni infection in Tensae Berhan, Ethiopia: Prevalence of schistosomiasis. Ethiopian Medical Journal. Vol. 17, 1979.
6. A Pilot Project for Schistosomiasis Control in Kemisse. Project out-line, Institute of Pathobiology, A.A. University, Jan. 1983 (stenciled circulation).
7. Schistosomiasis control project in Kemisse: preliminary summary of base-line findings. Institute of Pathobiology, A.A. University, March, 1983 (stenciled circulation).
8. Jordan, P. et al. Control of schistosoma mansoni transmission by provision of domestic water supplies. Bulletin of World Health Organization. Geneva, Vol. 52.
9. Kloos, H., and Lemma, A. The epidemiology of schistosoma mansoni infection in Tensae Berhan: human water contact patterns. Ethiopian Medical Journal, Vol. 18, No. 3, July 1980.
10. Polderman, A.M. The transmission of intestinal schistosomiasis in Begemder province, Ethiopia. Acta Leidensia, Vol. 42, 1975.
11. Mott, K.E. Schistosomiasis: a primary health care approach. World Health Chronicle, WHO, Geneva, Vol. 5, No. 3, 1984.
12. Isley, R.B., and Martin, J. F. The Village Health Committee: starting point for rural development. World Health Chronicle, WHO, Geneva, Vol. 31, 1977.
13. Ree, G.H. Schistosomiasis and Human Behaviour. Ecology of Diseases, Vol. 1, 1982.

