DISSERTATION

TOPIC: A STUDY OF SOME FACTORS AFFECTING THE PREVALENCE OF SCHISTOSOMIASIS IN 2 RURAL COMMUNITIES IN THE ASUOGYAMAN DISTRICT.

PRESENTED TO THE SCHOOL OF PUBLIC HEALTH UNIVERSITY OF GHANA

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF PUBLIC HEALTH DEGREE

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AUGUST 1999
DECLARATION

I, Dr. Albert Antobre-Boateng, do declare that this dissertation has been the result of my independent field research. Where material other than mine have been used, specific references have been made thereto. This work has neither been submitted towards the award of any degree, nor is it being submitted concurrently in candidature for any other degree.

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PROF. L. OSEI
DEDICATION

This work is dedicated to two women who have made significant contribution in my life. First, to my caring stepmother, Yvonne, for tutoring me the rudiments of life and making me what I am today and secondly to my loving wife, Olivia, for standing by me when the going was difficult.
ACKNOWLEDGEMENT

I wish to express my sincere gratitude to my Academic Supervisors, Prof. L. Osei and Prof. G. A. Ashitey, both of the Department of Community Health, University of Ghana Medical School for their support and direction during the writing of this dissertation.

I highly appreciate the kindness and support of the District Director of Health Services, Asuogyaman District, Mrs. Grace Nkrumah-Mills and the entire District Health Management Team.

I am also grateful to the Volta River Authority Hospital Administration for their support during my field practice.

Finally, I thank my sponsors, Ministry of Health and the Academic Staff of the School of Public Health, University of Ghana, Legon for making my dreams come true.
List of Abbreviations

DHMT - District Health Management Team
VRA - Volta River Authority
HE - Health Education
FA - Field Assistants
KVIP - Kumasi Improved Ventilated Pit Latrine
DHA - District Health Administration
DDHS - District Director of Health Services
HBM - Health Belief Model
FGD - Focus Group Discussion
NGO - Non Government Organisation
WHO - World Health Organisation
KAP - Knowledge, attitude and practice
ATL - Akosombo Textile Limited
GOG - Government of Ghana
MOH - Ministry of Health
DA - District Assembly
LI - Legislative Instrument
PNDC - Provisional National Defence Council
DALY’s - Disability Adjusted Life Years
ADHA - Asuogyaman District Health Administration
GWSC - Ghana Water and Sewerage Corporation
CPP - Convention People’s Party
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FIG. 1  A MAP OF GHANA SHOWING REGIONS AND THEIR CAPITALS

KEY
--- International Boundary
--- Regional Boundary
• Regional Capital

UPPER WEST REGION

Wa

UPPER EAST

Balgoanga

NORTHERN

Tamale

REGION

BRONG-AHAFO REGION

Sunnyi

ASHANTI REGION

Kumasi

EASTERN REGION

Koforidua

WESTERN REGION

CENTRAL REGION

ACCRA

GREATER ACCRA REGION

Cape Coast

Sekondi

Ho

0  40  80 KM
FIG. 2 MAP OF EASTERN REGION SHOWING DISTRICTS AND VOLTA LAKE

ASHANTI REGION

BRONG - AHAFO REGION

CENTRAL REGION

GREATERR ACCRA REGION

KEY
— Regional Boundary
— District Boundary

30 KM

0° 30'

0° 00'

0° 30'

1° 00'

1° 00'

0° 30'

0° 00'

30 KM

60 KM

0° 30'

0° 00'

0° 30'

1° 00'

1° 00'

0° 30'

0° 00'

XII
FIG. 3 MAP OF ASUOGYAMAN DISTRICT

LEGEND
- ASUO: districts
- ASUORDS: Roads
- ASUOLAKS: Lakes

0 5 10 KM
FIG. 4 MAP SHOWING STUDY COMMUNITIES

South Senchi

Akosombo

Atimpoku

Dzidzokope

Akradi

Fadjoku

Azagonorkofe

RESERVOIR LEVEL EL. 14.75

VOLTA RIVER

East Bank Road

Torgome

Kpong

To Somanya

To Accra

New Transmission Line To Tema

New Transmission Line To Akosombo

POWER FACILITIES AND DAM

WEST BANK ROAD

Natriku

TOWNSITE

ROAD TO AKUSE

KEY

Study Communities

Roads

0 5 10 Km
ABSTRACT

This study was intended to find the social and environmental factors that affect the prevalence of schistosomiasis in two rural communities in the Asuogyaman District.

The study was conducted in response to a felt need by the District Health Administration.

A comparative cross-sectional study was conducted, using both quantitative and qualitative methods. Data was collected using a structured questionnaire to interview young people aged 10-20 years on their knowledge, attitude and practice concerning schistosomiasis, a focus group discussion among a selected group of adults and a non-participant observation.

The study revealed the lack of water and sanitation facilities in Dzidzokope as compared to South Senchi where such facilities exist, to have contributed to the relatively higher prevalence in Dzidzokope. Also, the study showed that the community with a higher prevalence (Dzidzokope) is located just near the source of infection while that with a lower prevalence is further away from the river source.
Analysis showed that knowledge was high among respondents, with 80% in Dzidzokope and 86% in South Senchi associating schistosomiasis with the Lake but such knowledge is not consistent with their practices especially in the Dzidzokope community where the prevalence is higher.

In this study, members of both communities poorly rated education on schistosomiasis as a preventive and control measure, even though they receive health education on schistosomiasis from the school and the Volta River Authority.

Based on the findings of the study, the following key recommendations have been made to the relevant authorities:

- New settlements should be located fairly distant from the shores of the Lake and provided with water and sanitation facilities to reduce frequency of entry of the people into the water.

- Health education should stress on the mode of transmission of schistosomiasis.

- Treatment should be given to all members of the community at the same time.
CHAPTER ONE

1.0. INTRODUCTION.

1.1. Background Information

Schistosomiasis is a parasitic disease caused by different species of trematode parasites of the genus *Schistosoma*, which leads to chronic ill health with serious consequences on the socio-economic development of tropical and sub-tropical countries. Schistosomiasis or bilharziasis is a very ancient disease. It was Theodore Bilharz, a German pathologist, who first discovered *Schistosoma haematobium* worms while performing autopsy in Cairo, Egypt in 1852 (1). It was originally named *Distomium haematobium* but renamed *Schistosoma*, referring to the cleft (Schistos), and the body (Soma), of the worm. The disease, bilharziasis was later named after him by Cobbald and the infection is now commonly known as schistosomiasis, bilharziasis or bilharzia (2). Bilharz reported both terminal and lateral spined eggs in the oviduct of the female worms, while others like Manson found only lateral spined eggs in a patient from the Caribbean islands (3). The lateral spined species of *Schistosoma* is named after Sir Patrick Manson.

With time the problem of schistosomiasis has been exacerbated by water and agricultural development projects especially in the developing countries where the use of science and
technology in agrarian practices is on the ascendency. In endemic rural areas of many developing countries, schistosomiasis is an important occupational hazard (4).

The disease is endemic in 74 countries in Africa, South America, India, China, South East Asia, Sri Lanka, the Caribbean, Indonesia, Philippines, and Taiwan (5). The World Health Organization (WHO) reports that when these countries are considered together, 600 million people are exposed to the risk of infection and 200 million more are actually infected in these areas (6). In 1990, the disease was responsible for the loss of 1.5 million Disability Adjusted Life Years (DALY’s) worldwide (7); and mortality is estimated to exceed 100,000 per year. In Ghana, it is the second most prevalent parasitic disease after malaria (8).

The disease is endemic in the rural areas possibly due to the contamination of the source of water and the social and cultural practices of the inhabitants. Water is obtained from surface water for drinking and household chores. The water is fetched while standing in the water and laundry is sometimes done whilst standing in the water. When it is hot people swim in the water for considerable lengths of time. In most of these places there are no bridges and so people cross the river and streams to go from one bank to the other. These socio-cultural activities enhance skin-water contact, increasing risk of skin penetration by the cercariae.

In Ghana, prior to 1951, little precise information was available concerning schistosomiasis apart from brief references in the annual medical report (9). Prior to the formation of the Volta Lake, *Bulinus globosus* was the commonest and most widely distributed snail host in Ghana. It was found in all areas of the country but it was rare in
the Volta Basin. *Bulinus truncatus*, on the other hand, was limited to the Savannah areas, that is, the southeast area of the Volta Delta and parts of the Northern Ghana (10).

On the proposition for the damming of the River Volta for electricity generation, pre-impoundment studies were instituted to ascertain the distribution and prevalence of *S. haematobium* and *S. mansoni* in Ghana. It was found that, 15-20 % of the total population (over one million persons) had been infected with *S. haematobium* at some time in their lives whereas *S. mansoni* infections were rare (10).

Before 1964, the Medical Field Unit had reported that the overall prevalence of schistosomiasis for the country was about 18% among children but with pockets of high prevalence around the Volta Delta where 75% of the children and 40-60% of the adults were infected. However, the prevalence was generally less than 5% among children in other parts around the Lake (11). The low prevalence of schistosomiasis in this area was related to the scarcity of suitable snail hosts, which in turn was attributed to the less favourable ecological condition (12).

McCullough and Ali (13) also showed that infections of *S. haematobium* were relatively light upstream in the part of the river basin that would be affected by the new lake that would result from damming of the river. The possibility of an increase in transmission of the disease following the damming of the river was, however, foreseen. (14).

1.2 **Statement of the Problem**

A few years after the formation of the Lake, schistosomiasis became the most important public health problem along the Volta Lake and its basin. That this disease
would become a health problem around the lake was anticipated as it was one of the diseases, which the Preparatory Report had mentioned (15). In furtherance of this and in accordance with the provisions of section 13 of the Volta River Development Act of 1961 (Act 46), a Schistosomiasis Control Unit was established under the Health and Safety Department of the Volta River Authority (VRA) to limit the incidence of the disease as a Public Health problem along the Lake.

The objectives of this unit are:

1) To maintain health surveillance over the Volta Lake to ensure that the formation of the lake does not adversely affect the health of the population around the Lake;
2) To ensure that, proliferation of weeds in the Volta Lake is controlled through periodic harvesting and surveillance of obnoxious weeds, which provide conducive habitat for vectors of water-borne diseases (16).

The main activities undertaken to achieve the above objectives of the Schistosomiasis Control Unit involve:

- Diagnosis and treatment
- Snail host control and
- Health Education

Even though the control programme has been in place for sometime, available statistics show that the disease is still a major public health problem in the Asuogyaman District of Ghana with an average prevalence of about 60% (16). Table 1 shows prevalence in some selected communities where surveys were carried out between 1993 and 1998 in the Asuogyaman District. The Schistosomiasis Control Unit, in one of its outreach services in 1997, sampled two communities, namely South Senchi and Dzidzokope, for diagnosis.
and treatment. By 1998, one community, South Senchi, has had a decrease in prevalence while the other sampled community, Dzidzokope, has had an increase in prevalence. This is in contrast to the general trend of a decrease in prevalence after diagnosis and mass treatment in the other communities sampled (Table 1). Although the drugs used for treatment are effective in curing the subjects, infection re-occurs. Control may be possible if we do understand the knowledge, attitude and practice (KAP) of the people in the endemic areas, in relation to the problem.

This study was undertaken upon the request of the Asuogyaman District Health Administration (ADHA) to find reasons for the change in prevalence in these two communities in 1998 even though they both had treatment and health education in 1997. If a better understanding of these factors is obtained and used in conjunction with medical efforts then schistosomiasis can be brought under control. Hopefully, the findings of this study will serve as a tool for the control of schistosomiasis in the district.
Table 1. **PREVALENCE OF URINARY SCHISTOSOMIASIS INFECTION AMONG SOME COMMUNITIES IN THE ASUOGYAMAN DISTRICT.**

<table>
<thead>
<tr>
<th>Locality</th>
<th>Year of Survey</th>
<th>No. of People Surveyed</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marine Village</td>
<td>1993</td>
<td>236</td>
<td>66.9</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>108</td>
<td>39.8</td>
</tr>
<tr>
<td>Konkontekpedzi</td>
<td>1994</td>
<td>60</td>
<td>50.0</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>50</td>
<td>70.0</td>
</tr>
<tr>
<td>Abume</td>
<td>1997</td>
<td>20</td>
<td>40.0</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>15</td>
<td>66.7</td>
</tr>
<tr>
<td>Mangoase</td>
<td>1994</td>
<td>22</td>
<td>68.2</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>51</td>
<td>52.9</td>
</tr>
<tr>
<td>Ghanakpe</td>
<td>1994</td>
<td>24</td>
<td>87.5</td>
</tr>
<tr>
<td></td>
<td>1997</td>
<td>29</td>
<td>55.2</td>
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<tr>
<td>Small London</td>
<td>1994</td>
<td>34</td>
<td>88.2</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>45</td>
<td>44.4</td>
</tr>
<tr>
<td>Old Akrade</td>
<td>1994</td>
<td>60</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>29</td>
<td>58.6</td>
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<td>1997</td>
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<tr>
<td></td>
<td>1998</td>
<td>50</td>
<td>18.0</td>
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<td>Dzidzokope</td>
<td>1997</td>
<td>50</td>
<td>64.0</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>50</td>
<td>68.0</td>
</tr>
</tbody>
</table>

*Source: Schistosomiasis Control Unit, VRA, Akosombo, 1999.*
1.3 General Objectives

The main objective of the study was to study the social and environmental factors, which affect the prevalence of schistosomiasis in two communities in the Asuogyaman District of the Volta Basin.

1.4 Specific Objectives

The specific objectives of the study were to determine:

1. the knowledge, attitudes and practices among young people between the ages of 10-20 years in the 2 communities which affect prevalence of schistosomiasis.

2. the environmental situation in the 2 communities.

1.5 Definition of Terms

Knowledge: Understanding of information about a subject which has been obtained by experience or study, and which is either in a person’s mind or possessed by people generally.

Attitude: Feeling or opinion about something or someone or a way of behaviour that follows from this and is used for a person’s judgement of a behaviour as good or bad.

Practice: A way of doing something that is common, habitual or expected. A thing done regularly, a custom, a habit.
CHAPTER TWO

2.0 LITERATURE REVIEW

In schistosomiasis endemic areas, human water-contact may result in infection if the water is infested with human schistosome cercariae. Studies in water contact patterns are important in determining the principal activities involved and the age and sex groups which are most at risk of exposure to schistosomiasis (17,18). Chandiwana et al (19) in their study of community water-contact patterns and the transmission of S. haematobium showed that water contact was markedly heterogeneous with sex, age, type of activity and village location being the major variables affecting water contact patterns.

In his study of the relationship between human water contact activities and the transmission of bilharziasis, Hasting (20) observed that where safe water supply were provided and more particularly, if the sociological and practical aspects were taken into account, the rate of transmission of schistosoma decreased. He also showed that where a safe water programme were combined with sound soil and water conservation practices, the human environment improved.

In an experimental study in St. Lucia (21) to control the transmission of S. mansoni by the provision of reliable, adequate and conveniently available water supply, it was found that the incidence of S. mansoni infection among children decreased by 59% in the experimental area, leading to lower intensity of infection in all age groups. Over the study
period, indices of infection increased in the comparison settlements, but by the end of the period development was making those settlements less suitable for comparison purposes and some reduction in transmission was occurring. It was suggested that a piped water supply be considered as a method of schistosomiasis control, but that the cost should not be debited only to the control of this disease since a clean water supply has other medical and social benefits.

Certain insanitary personal habits and faulty environmental conditions are responsible for the maintenance of bilharziasis. Farooq et al (22) studied the relationship between the prevalence of *S. haematobium* and certain environmental factors (size of community and village, location of village in relation to type of watercourse, source of water supply, type of housing, presence and use of latrines). They discovered that there was no direct relationship between the size of village and the prevalence of bilharziasis and that the availability of a protected water supply seems to have the greatest effect on the prevalence. They also found that although the presence of a latrine in the dwelling did not itself influence the extent of schistosoma infection, which is caught from polluted water, the installation of latrines assists in the cultivation of healthy habits, thereby lessening the prevalence not only of bilharziasis but also of certain other infections.

In Ghana, areas below the Akosombo dam and throughout the southeastern part had become endemic with *S. haematobium* infection (23). In 1969, transmission of *S. haematobium* was significant around marshes and ponds connected with the Volta River. Prevalence in excess of 75% was recorded in all localities surveyed and the prevalence
was found to be inversely proportional to the distance from transmission sites in the Volta River Delta, as well as in the Eastern Region where prevalence of *S. haematobium* was low (24).

A study conducted in school children by Ashitey et al in 1983 (25) in the Suhum district of the Eastern Region showed that the overall prevalence was high, varying between 14% and 93.5%. The study showed, moreover, that schools with very high prevalence above 60% were close to three main rivers, the Densu, Suhum and Kua.

The role of personal attributes, behavioural and social factors on the prevalence of bilharziasis has been studied by Farooq et al (26). The over-all prevalence of bilharziasis was determined in a cross-sectional survey in 3 areas in Egypt. They found higher rates of infection in males than females, farmers and fishermen and that differences in infection rates were also related to differences in religion, educational status and domestic habits (swimming, washing clothes, utensils and cattle) according to the opportunity provided for contact with polluted water. They concluded that swimming, because of the thorough exposure to possible schistosome infection that it provides, is one of the most important activities involved in the transmission of bilharziasis.

However, a safe water supply by itself may not be sufficient to reduce disease transmission. Sometimes it is difficult to change the attitudes of people towards pipe-borne-water and so health education becomes imperative if the programme is to be
successful (27). In this respect, health education should aim at streamlining the
knowledge, feelings and behavior of the people towards an improved health.

Health education works best when people are truly interested in the problem at hand.
Frequently, however, when communities list their priority problems, specific diseases do
not rank among them. The literature indicates that people do not generally recognize
schistosomiasis as a priority problem because of the following (27):

- The disease has always been with them;
- They have more obvious problems, such as poor harvest and poverty;
- The disease causes little apparent mortality;
- They do not know the cause of the disease;
- They do not know that the disease can be prevented;
- They lack the time, money, materials and skills to take effective action;
- Solutions to the problem may undermine the power of the influential community
  leaders and therefore be restricted.

Understanding how people regard a problem such as schistosomiasis
makes it easier to communicate with them about the problem and help them
to see that solution of the problem may in fact coincide with their interest and priorities.

Although water-contact studies have provided the fullest and most detailed descriptions
of social risk factors, and have isolated age, sex, religion and occupation as primary risk
factors, fuller exploration of the social and cultural context of infection have yet to be
undertaken. Research papers concerned with community-based interventions refer to poor
community understanding of the cause, prevention and treatment of the disease, this domain has also received little scholarly attention (28).

In a study in an Egyptian village in 1993, researchers found that after 2 years of implementation of the National Bilharzia Control Programme by the Ministry of Health, the general prevalence dropped from 47.2% to 21.9%. However, the incidence rate remained nearly the same before and 2 years after implementation of the programme (18.7% and 18.1% respectively) simply because the knowledge, attitude and practice of the population concerning water contact have not yet changed (29). The researchers recommended intensive health education programme for the population especially school children, coupled with active case finding and treatment.

A study conducted in 1987 by Taylor et al (30) on knowledge, attitude and practices in relation to schistosomiasis in a rural community in Zimbabwe revealed that 50% of the people sampled thought the disease to be a problem and 79% gave haematuria as a symptom of the disease. Also the study showed a unanimous wish of the people to have a latrine with the main reason being given as less disease.

Various workers have shown the relationship between behaviour, water supplies and schistosomiasis (31,26) and the variability in these relationships due to cultural and social differences must be taken into account in any primary health care based control programme which of necessity must involve the community.
SOME THEORETICAL PERSPECTIVES GUIDING THIS STUDY

Any service provider or development worker whose aim is to change the behaviour of people must understand human behaviour and appreciate all the factors which influence behaviour, one way or the other.

The Health Belief Model (HBM) says that if a person is to perform a particular act, say health, that person has to believe they are susceptible, that the health problem could affect him or her personally rather than other people or society as a whole; feel that the condition is serious; that the condition can lead to death or other serious consequences if action is not taken (32). The person also has to believe that the condition could be prevented and that the benefits of taking action will outweigh the disadvantages.

When applied to the study under consideration, the questions to be asked are: To what extent do people consider themselves susceptible to bilharzia and how serious does a person consider bilharzia can be prevented and controlled.
3.0 THE STUDY AREA AND RESEARCH METHODOLOGY

3.1 THE ASUOGYAMAN DISTRICT

The Asuogyaman District in the Eastern Region of Ghana was established on 18th April 1988 following the creation of new districts to facilitate the decentralization programme by legislative instrument (LI 431).

The literal meaning of Asuogyaman which is made of two Akan words “Asuogya” and “man” is “River bank state”. This stems from the fact that all the major towns in the district lie on either side of the Volta River.

Asuogyaman district is located in the southeastern corner of the Eastern Region of Ghana, on latitude 6000' and 6050' and longitude 0000' and 0007'.

The climate of the area is influenced by two major air masses

1. The Southwest moisture laden monsoon which brings rain between March and October.
2. Northwest dry dust-laden harmattan, which brings drought between November and February.

The heaviest rainfall occurs between June and August each year.

The district covers an area of 1,507 square kilometers out of which the lake occupies about a third.
The Akosombo Dam is situated in this district. The creation of the dam in 1964 to generate hydro-electric power for the country led to resettlement of inhabitants in eight communities, which led to social, economic and health problems such as inadequate land for farming leading to low socio-economic status, and increased prevalence of such diseases as malaria and schistosomiasis as a result of the decreased flow of the river.

The district capital is Atimpoku but Akosombo seems to have overshadowed it because the latter is famous as a result of the dam.

There are 140 villages and towns and the projected population for 1998 is 85,163. Politically, the district is divided into 5 zones but the health administration has 4 subdistricts. Inhabitants are mainly the Akwamu, the Anum and the Boso. These are interspersed with scattered settlements of Ewe and Krobo who share borders with the district.

The main economic activities include farming and fishing. The main mode of transportation is by road, however boats are also used by some communities especially those living along the Volta Lake.

The presence of Volta River Authority (VRA) in the district enhances health delivery because VRA has its own hospital for its staff in Akosombo and the resettled villages, leaving the DHMT to concentrate on other parts of the district. In fact this hospital acts as the district hospital.

The common diseases in the district are malaria, schistosomiasis, diarrhoeal disorders, yaws and acute respiratory tract infections.
The study was done in two communities in the Asuogyaman District. These communities were South Senchi and Dzidzokope both in the Atimpoku Subdistrict.

3.2 RESEARCH METHODOLOGY

3.2.1 Type of Study

This study was designed to be a comparative cross-sectional study

3.2.2 Research Questions

The research questions were:

1. What are the characteristics of the people?
2. Does the present knowledge of the people on schistosomiasis have any influence on their risk of infection?
3. What are their attitudes towards the disease?
4. What are the practices of the people?
5. What other factors may have contributed to the difference in the prevalence in the two communities.

3.2.3 Study Population

The study population comprised young people between the ages of 10-20 years and a selected group of adults resident in South Senchi and Dzidzokpe in the Asuogyaman District.

Young people are the most susceptible and most heavily infected group of people due to their frequency of contact with water bodies (33).
The study was also confined to this age group as they were in a position to comprehend and offer intelligible answers to the interviews and discussions than the younger ages.

3.2.4 **Sample Size**

Since it was difficult to know the population of the target group in the district, the decision was made to take a convenient sample size of 100 young people from each community. That is 100 young people in each target population in each chosen community, making a total of 200. This was to enable me to get the realities on the ground.

3.2.5 **Data Collection Methods**

3.2.5.1. **Quantitative Data**

The data collected related to knowledge, attitude and practice about schistosomiasis. This involved field data collection using a structured questionnaire containing closed and open-ended questions for young people aged 10-20 years. Trained research assistants administered questionnaires to eligible respondents and they filled in responses as given by respondents.

3.2.5.2. **Qualitative Data**

Other data collection methods used in the study were Focus Group Discussion (FGD) involving some selected adults using a FGD guide and a non-participant observation. These were to compliment the questionnaire.
3.2.6 Selection Procedure

3.2.6.1 Selection

Selection of the communities was purposeful.

Two communities, one with an increase in prevalence from a baseline data (Dzidzokope) and another with a decrease in prevalence (South Senchi) were chosen (Table 1).

3.2.6.2 Identification of respondents

In the communities selected, a team of research persons led by the principal investigator located the centre of the community and standing there, spun a pen. The direction of the tip of the pen was followed by the principal investigator and all the houses in the direction of the pen were counted and numbered and one house was chosen by a simple random sampling. This house was entered and the questionnaire administered to eligible respondents. The next house was identified by locating the entrance of that house facing the preceding house. This was repeatedly done till the required sample was obtained.

For the focus group discussion, the community leaders and some members of the DHMT recruited the participants. The principal investigator and one member of the DHMT visited the communities and held discussions on the impending study with the community leaders.

The FGD was conducted in each community. A note taker and a facilitator organized all the discussions. At the end of the discussion, the facilitator confirmed and summarized
issues that had arisen. All discussions were taped after obtaining permission from participants.

3.2.7 Preparation for Data Collection

A plan was developed to train two research assistants. The training dealt with communication skills, translation of locally acceptable words and how to administer a questionnaire and conduct FGD.

Pre-testing of the data collection tools was done in one of the sub-districts not selected for the study before the main study was carried out.

The purpose of the pre-testing was to determine respondents understanding of the questions and also to determine the efficiency of the research assistants. After pre-testing, questions were modified where appropriate before the final questionnaire was produced for the main study.

Pre-testing of the FGD guide did not indicate the need for any modification.

3.2.8 Quality Control of Data

All data collected by an interviewer were checked by him/her to ascertain whether the questionnaire was properly filled in before the interview was terminated. Also, on the spot checks by the principal investigator on the day of the interview was done to ensure that, the questionnaires were properly filled.

Also, the principal investigator made sure that after each day's fieldwork, data collected for that day were complete, accurate and consistent by going through the questionnaires.
3.2.9. **Data Analysis**

The questionnaire collected was analyzed using EPI Info 6 computer software to obtain and to produce frequencies, means and cross tabulation.

The recorded FGD’s were transcribed and data compared and cross checked with information recorded verbatim by the note taker.

3.2.10. **Ethical Considerations**

Respondents who admitted through the questionnaire or focus group discussion, as having symptoms of schistosomiasis were advised to visit the nearest health facility for treatment.

Participation in the study was voluntary and consent was sought from respondents and participants before all interviews and discussions were conducted.

Confidentiality and anonymity of respondents was assured. Names of respondents and participants were not recorded.

3.2.11. **Limitations of study**

The principal language spoken in the two communities is Ewe. The principal investigator could therefore not actively participate in the interviews and the FGD’s.

The study questionnaire and FGD guide were in English and data collection staff had to translate questions from English to Ewe and responses back into English.

Although a standard register of locally acceptable words and translations were agreed upon during training of data collection staff, misunderstanding on the part of the interviewer or the respondents and the issue of translating
questions and responses could affect the outcome of this study.
CHAPTER FOUR

4.0. RESULTS

The key findings of the research are presented in this section as follows:

4.1. QUESTIONNAIRE DATA

A total of 200 questionnaires were administered to young people between 10-20 years of age.

4.1.1 Background Characteristics

The characteristics of respondents are presented in Table 2.

The mean age of respondents was 14.68 years for Dzidzokope and 14.13 years for South Senchi.

The mean lengths of stay in their village were 11.04 years and 10.39 years for Dzidzokope and South Senchi respectively. From both communities, there were slightly more females than male respondents. The majority of respondents from both communities were Christians, Ewes and attend school.
Table 2. Background Characteristics of Respondents

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age (yrs)</td>
<td>14.68</td>
<td>14.13</td>
</tr>
<tr>
<td>Mean length of stay in village (yrs)</td>
<td>11.04</td>
<td>10.39</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44</td>
<td>44</td>
<td>47</td>
<td>47</td>
</tr>
<tr>
<td>Female</td>
<td>56</td>
<td>56</td>
<td>53</td>
<td>53</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Akan</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Ewe</td>
<td>95</td>
<td>95</td>
<td>96</td>
<td>96</td>
</tr>
<tr>
<td>Krobo</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Christian</td>
<td>91</td>
<td>91</td>
<td>92</td>
<td>92</td>
</tr>
<tr>
<td>Moslem</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
<td>7</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>School</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>89</td>
<td>89</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>No</td>
<td>11</td>
<td>11</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

4.1.2 Sanitation

No latrines were present in homes of 93.5% of the 2 communities. Specifically 95 out of the 100 people in Dzidzokope and 92 out of 100 in South Senchi did not have toilets in their house.

Of those who did not have toilets in their house in Dzidzokope, 25 (25%) of them defecated in the bush and 70 (70%) made use of the public latrine. For South Senchi those who defecate in the bush constituted only 2 (2%) and 90 (90%) use the public
latrine (Table 3). Of those who had toilets in their houses, the types used are pit latrine (4.5%), pan latrine (0.5%) and KVIP (1.5%).

Table 3. Place of Defaecation in the 2 communities.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>In the bush</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Public latrine</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Toilet in the house</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The young people overwhelmingly wanted a latrine. In Dzidzokope, 83% wanted latrine in their houses (Table 4), giving reasons for such a need as distance to public latrine too far (20%), not to cross the road (35%), not to defecate in the bush (17%) and none in our house (21%) (Table 5).

In South Senchi, 76% expressed the desire for a toilet, with reasons as too far (50%), not to defaecate in the bush (28%), and none in our house (14%).
Table 4: Desire for toilet facilities.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Want a toilet in the house</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>83</td>
<td>83</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Have toilet in the house</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 5: Reasons for wanting/ not wanting a toilet in the house

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Will give disease</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Too far</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Father will not allow</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Not to cross the road</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>None in our house</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Not to defecate in bush</td>
<td>17</td>
<td>17</td>
</tr>
<tr>
<td>Have toilet in the house</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Reasons given by those who did not want a latrine in their houses were father will not allow, will give disease, and no reason.

4.1.3 Water Supply

Ninety-eight percent of the people interviewed in Dzidzokope said they had stream or river in their village whilst the number for South Senchi is 97%. Only one person admitted having a pipe borne water in the house in Dzidzokope compared to 3 people in South Senchi.

Drinking water is usually obtained from the River Volta or a communal tap. In all 169 people use pipe water for drinking while the remaining 31 use the River Volta.

Table 6 summarizes the source of water for various domestic activities.

**Table 6: Source of Water for Domestic Activities.**

<table>
<thead>
<tr>
<th>Item</th>
<th>Source</th>
<th>Dzidzokope Frequency</th>
<th>South Senchi Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinking</td>
<td>River Volta</td>
<td>31</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pipe</td>
<td>69</td>
<td>100</td>
</tr>
<tr>
<td>Bathing</td>
<td>River Volta</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Pipe</td>
<td>20</td>
<td>99</td>
</tr>
<tr>
<td>Washing</td>
<td>River Volta</td>
<td>84</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Pipe</td>
<td>16</td>
<td>99</td>
</tr>
<tr>
<td>Cooking</td>
<td>River Volta</td>
<td>56</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pipe</td>
<td>44</td>
<td>100</td>
</tr>
</tbody>
</table>
In South Senchi, all the 100 people interviewed use the pipe as their source of drinking water while only 69 do so in Dzidzokope.

In South Senchi, 99% of the people use pipe-borne water for bathing and washing of clothes, while only 20% and 16% respectively do so in Dzidzokope. This means a high percentage of the people use the river for bathing (80%) and washing (84%) in Dzidzokope.

All the children interviewed at South Senchi admitted using pipe-borne water for cooking while only 44% do so in Dzidzokope.

4.1.4. Knowledge Concerning Schistosomiasis

Asked to name the sort of disease affecting their communities most, those in Dzidzokope named such diseases as bilharzia (69%), malaria (8%), cholera (2%), diarrhoea (7%) while in South Senchi, the figures are 45%, 16%, 3%, 3% respectively.

Ten percent in Dzidzokope and 21% in South Senchi did not know the sort of disease affecting their communities.

Table 7: Diseases affecting their community most according to respondents.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Bilharzia</td>
<td>69</td>
<td>69.0</td>
</tr>
<tr>
<td>Malaria</td>
<td>8</td>
<td>8.0</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>7</td>
<td>7.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Cholera</strong></td>
<td>2</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Gonorrhea</strong></td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Piles</strong></td>
<td>2</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Measles</strong></td>
<td>1</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Don’t know</strong></td>
<td>10</td>
<td>10.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Asked if they have heard of bilharzia, 55% of the respondents in Dzidzokope answered yes while 48% admitted to this in South Senchi.

When asked to name the source of their information about the disease, those in Dzidzokope named such source as neighbour (8%), family (11%), health worker (4%), and school teacher (31%). No respondent named a VRA worker as a source of information. In South Senchi, the sources of information concerning the disease are neighbor (10%), family (4%), health worker (12%), school teacher (20%) and VRA worker (2)%.

Table 8 shows that respondents were clearly able to recognize blood in the urine as a symptom of schistosomiasis among others.
Table 8: Symptoms of Bilharzia as given by respondents.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th></th>
<th>South Senchi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Blood in urine</td>
<td>87</td>
<td>87</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Weight loss</td>
<td>11</td>
<td>11</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Blood in stool</td>
<td>-</td>
<td>-</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Headache</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Others such as vomiting</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

In Dzidzokope, 86% of the respondents were able to correctly give the local name for bilharzia while 97% were able to do so in South Senchi.

In both communities, the majority of the respondents' think that bilharzia is a disease (94% say so in Dzidzokope and 96% in South Senchi). Asked whether bilharzia is common in their village, 83% said yes in Dzidzokope and 67% in South Senchi.
The following were the responses when asked about the presence of bilharzia in the family (Table 9).

**Table 9: Knowledge of presence of bilharzia in the family.**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th></th>
<th>South Senchi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Myself</td>
<td>43</td>
<td>43.0</td>
<td>17</td>
<td>17.0</td>
</tr>
<tr>
<td>Sister</td>
<td>22</td>
<td>22.0</td>
<td>9</td>
<td>9.0</td>
</tr>
<tr>
<td>Brother</td>
<td>41</td>
<td>41.0</td>
<td>25</td>
<td>25.0</td>
</tr>
<tr>
<td>Parents</td>
<td>4</td>
<td>4.0</td>
<td>3</td>
<td>3.0</td>
</tr>
<tr>
<td>None</td>
<td>-</td>
<td>-</td>
<td>46</td>
<td>46.0</td>
</tr>
</tbody>
</table>

It is to be noted that more than 1 family member of respondents from Dzidzokope were infected with bilharzia.

When asked to name the cause of blood in urine, Table 10 presents the responses received.

**Table 10: Knowledge of Cause of Blood in Urine**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th></th>
<th>South Senchi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>The lake</td>
<td>80</td>
<td>80</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>Dirty water</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Don’t know</td>
<td>19</td>
<td>19</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Altogether 83% of all the 200 respondents in the 2 communities know the lake/river as the source of bilharzia.

Knowledge about transmission of schistosomiasis was less clearly understood by both communities, with 22% in Dzidzokope admitting having any knowledge and 29% in South Senchi.

When those who admitted to any knowledge were asked further to show how the disease was transmitted, Table 11 presents the responses.

**Table 11: Knowledge of the Transmission of Bilharzia**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Drinking water</td>
<td>16</td>
<td>72.7</td>
</tr>
<tr>
<td>Swimming in the river</td>
<td>1</td>
<td>4.6</td>
</tr>
<tr>
<td>Eating with an infected person</td>
<td>5</td>
<td>22.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

However when probed further to show how one gets the disease, the majority of the respondents identified swimming, bathing and fishing in the river as risks which can make one get the disease (Table 12).
Table 12: Knowledge of Risk factors that contribute to Bilharzia

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Fetching water from the river</td>
<td>17</td>
<td>17.0</td>
</tr>
<tr>
<td>Swimming</td>
<td>61</td>
<td>61.0</td>
</tr>
<tr>
<td>Bathing</td>
<td>62</td>
<td>62.0</td>
</tr>
<tr>
<td>Fishing</td>
<td>32</td>
<td>32.0</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>6.0</td>
</tr>
</tbody>
</table>

It is interesting to note that more than 50% of respondents in each community were able to give more than one risk factor for disease causation.

Knowledge about the control and preventive measures for the disease bilharzia was varied between the 2 communities.

While 65% in Dzidzokope thought that not bathing in the lake was good, 85% in South Senchi also thought so. With respect to not swimming, 41% Dzidzokope thought its good as a preventive measure as against 63% of the respondents in South Senchi (Table 13).
Table 13: Knowledge of Preventive and Control Measures of bilharzia in the 2 Communities

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not bathing in lake</td>
<td>65</td>
<td>85</td>
</tr>
<tr>
<td>Not swimming in lake</td>
<td>41</td>
<td>63</td>
</tr>
<tr>
<td>Clearing surroundings</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Providing toilets</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>Providing portable water</td>
<td>17</td>
<td>46</td>
</tr>
<tr>
<td>Taking drugs</td>
<td>63</td>
<td>65</td>
</tr>
<tr>
<td>Community education about bilharzia</td>
<td>10</td>
<td>11</td>
</tr>
</tbody>
</table>

4.1.5 Attitudes Concerning Schistosomiasis

The attitude of respondents towards contracting bilharzia is summarized in Table 14. Among respondents, 75% in South Senchi said they informed their parents about the disease but only 24% sought treatment in a clinic or hospital. In Dzidzokope, a little over half the respondents, 54%, informed their parents about urinating blood and an equal number, 53% admitted seeking treatment in a hospital. Only one person in Dzidzokope went to a traditional healer for help. Among respondents, 15% went to a chemical shop, bought a drug and took it in Dzidzokope whilst 19% did so in South Senchi.
Table 14: Respondents Attitude towards Bilharzia, Asuogyaman District.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th></th>
<th>South Senchi</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percentage</td>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>If you noticed blood in urine, what did you do?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informed parents</td>
<td>54</td>
<td>54</td>
<td>75</td>
<td>75</td>
</tr>
<tr>
<td>Sought treatment in clinic</td>
<td>53</td>
<td>53</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Went to a traditional healer</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bought drug and took it</td>
<td>15</td>
<td>15</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Did nothing</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

As asked what should be done to somebody who has blood in the urine, responses obtained are presented in Table 15.
Table 15: Attitude of respondents towards somebody with bilharzia.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent of Respondents</td>
<td>Percent of Respondents</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>What should be done to somebody with blood in urine?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Be given drug</td>
<td>81</td>
<td>18</td>
</tr>
<tr>
<td>Not allowed near river</td>
<td>25</td>
<td>75</td>
</tr>
<tr>
<td>Be educated about transmission of disease</td>
<td>4</td>
<td>95</td>
</tr>
<tr>
<td>Be sent out of town</td>
<td>0</td>
<td>99</td>
</tr>
</tbody>
</table>

It is noted that whilst 81% in Dzidzokope think that a person with blood in urine should be given a drug, only 61% in South Senchi think the same. However, 40% in South Senchi think that such a person should not be allowed near the river whilst only 25% from Dzidzokope think so.

On whether the infected person needs to be educated about the transmission of the disease, the responses from both communities were discouraging. Whilst 20% in South Senchi think it is necessary, only 4% in Dzidzokope are in agreement with this opinion.
In both communities, only 3 out of the 200 respondents think that the diseased person should be sent out of town. This is probably a matter of comradeship and the fact that the respondent knows that one day, he may contract the disease and be a victim.

Schistosomiasis was considered a problem in their area by 90% of respondents in Dzidzokope whilst in South Senchi 69% of respondents thought similarly, 22% said no, and 9% did not have any idea.

### 4.1.6 Practices with Regards to Schistosomiasis

Respondents were asked questions relating to factors and practices which make them susceptible to acquiring the disease. Practices mentioned are swimming, bathing, fishing and standing and washing clothes in the river.

The practices of the respondents are summarized in Table 16 below.

**Table 16: Practices of respondents as risk factors for Bilharzia.**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Dzidzokope</th>
<th>South Senchi</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent of Respondents</td>
<td>Percent of Respondents</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Swimming in the river Volta</td>
<td>72</td>
<td>28</td>
</tr>
<tr>
<td>Urinate into the river</td>
<td>55</td>
<td>45</td>
</tr>
<tr>
<td>Fish in the river</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Stand and wash in the river</td>
<td>89</td>
<td>11</td>
</tr>
</tbody>
</table>
Generally, the respondents in Dzidzokope indulged in such practices as swimming, urinating into the river, fishing and standing and washing in the river more than those in South Senchi.

4.2 FOCUS GROUP DISCUSSION

A focus group discussion was conducted in each community. The number of participants in each group was 10 comprising 6 men and 4 women. The majority of participants were fishermen, fishmongers, traders, and farmers. There was one civil servant and a queen mother from the South Senchi group. Few had little or no formal education.

When participants were asked to name the main problems affecting their communities, the list from participants from Dzidzokope are as follows: there is no pipe-borne water, they urinate blood, no toilets and no school.

"No latrine in the town. We have to cross the main road and the children are often knocked down by vehicles".
"No latrine in the town. People defecate around the bushes. We need latrine".

This expression of need by participants from Dzidzokope is in agreement with response obtained in the questionnaire, where 95% of the interviewed children said they did not have toilets in their houses and needed one, either in their houses or community (86%). In South Senchi, their main problems are erosion, choked KVIPs and closure of some of the pipes by GWSC. No participant named urinating blood as one of their main problems.

However, when asked to name the most common health problems in their communities participants from both communities named bilharzia as a health problem.
When asked about the cause of the disease, all participants from Dzidzokope blamed the River Volta.

"It is the river Volta. Before the dam this disease was not here. The water is now stagnant which helps the germs to grow."

Those from South Senchi expressed different views:

"Defecating and urinating in the river. "Most fishermen have the disease and when they go fishing, they urinate into the river and another go into the river for fishing and he gets the disease."

These opinions show that participants from both communities know the river Volta as the source of the disease bilharzia. The majority of the young people are also aware of this where 80% in Dzidzokope and 86% in South Senchi think the River Volta is the cause of blood in urine.

All the participants from both communities were of the opinion that bilharzia is a problem in their community. Asked to explain why they think so, 2 participants from Dzidzokope had this to say:

"The VRA gives our children drugs but they still get the disease."
"We go back to the River because we do not have pipe water."

From South Senchi: "The children are always urinating blood and losing weight because of the blood loss."

On the question of the VRA staff or nurses coming to the community and what exactly they do the general consensus was that the VRA staff comes to treat the children after examining the urine and the nurses conduct child welfare activities.

The general opinion from both communities was that the time interval between treatment is too long, in some cases 3 years. The above opinion is in contrast to those in the
questionnaire where none of the children in Dzidzokope, who are recipients of the treatment given by the VRA named a VRA staff as a source of information concerning bilharzia while only 2% in South Senchi named a VRA worker.

Concerning how useful the activities of the VRA workers have been with respect to health, there were divergent opinions from both communities. Those from Dzidzokope consider the VRA as the source of their problem, as indicated in the following:

"They have spoilt the water. It gives us disease".

"The VRA Hospital charges us too much when we go there. The Government should do something about it because it is the VRA which spoil the water for us".

Those from South Senchi however consider the mass treatment of their children as good as it helps to control the disease. They however think the drugs should be given more frequently and that adults should be included in the treatment.

"The adults are not treated. They should treat us too. We also urinate blood".

When participants were asked to give reasons for the high prevalence of the disease in their communities, the majority opinion from both communities was their frequent contact with the river for various activities. This is especially so in the case of Dzidzokope. Other reasons given are:

"VRA does not come regularly to treat us. At times 3 years before they come which is too long". "People defecate around". "The adults, especially the fishermen also go to the river for fishing and they urinate into the river so another person gets the disease".
These opinions give one the idea that the people know and are aware of the risk factors of the disease and how it can be prevented.

When participants were probed to give reasons why they still go to the river despite knowing that it is the river that gives them the disease, participants from both communities said they had no other alternative. A participant from Dzidzokope had this to say:

"There is no other water around apart from the river".
"Only one pipe. You have to cross the major road to fetch pipe water".

From South Senchi, a participant who is a fisherman, said:

"We know, but it is there that we get our daily bread".
"When they close the taps, we get the river water to drink".

All participants from both communities agreed that they need pipe water and toilets in their community because it will make them healthy and free from diseases. This is in agreement with what was expressed by the children in the questionnaire, when 83.7% of the 200 respondents said they will want a toilet in their houses or community and gave such reasons as public toilet too far, not to cross the major road, and not to defecate in the bush.

Asked to give their opinions on what should be done by the government or VRA to help in the control of the disease, most participants in Dzidzokope think that construction of toilet and pipe borne water was necessary. "The VRA should construct toilets and pipe so
that after treatment we do not go back to the river”. One person re-echoed the drug problem: “The VRA should bring the drugs regularly”.

No participant in South Senchi mentioned the need for sanitation and water facilities because they have these in their community but ask that VRA’s research officers should look into the disease and help solve the problem about the disease. One participant from South Senchi asked that adults should also be treated.

On what the communities have done by themselves to limit and control the disease, the general activity is that they beat gong gong and advice the citizens especially the children not to swim in the river and defecate around the river.

On whether they would like to take part in any community programme aimed at controlling bilharzia, the general consensus from both communities was yes.

Participants from Dzidzokope expressed the wish for technical men to help them in whatever activity that will be agreed upon. They also wished that the VRA should treat them when they enter the river to clear the weeds, so that they do not get the disease.

Those from South Senchi were of the opinion that communal labour, which they have been organizing, has been helpful but they need more education and treatment to help reduce the disease.
It is interesting to note that there is no village health committee in Dzidzokope while such a structure exists in South Senchi.

It emerged from the discussion that participants from both communities do not associate the disease with any cultural or superstitious beliefs.

“The disease is from the river”. “It is the Dam which brought the disease”.

From the FGD, it is clear that participants from both communities know the cause and source of the disease, risk factors associated with the disease, how to prevent and control it but they are helpless in this regard.

4.3. NON-PARTICIPANT OBSERVATION

4.3.1. Dzidzokope

Dzidzokope is an autochthonous village, which extends about 10 meters from the lake. It is about 6 kilometers from the Akosombo township. The people inhabiting the village are mainly Ewes who have migrated to that location mainly because of their fishing activities.

The buildings are of mud and most of the houses have thatched roofs. The buildings are haphazardly sited with no clear cut planning for roads and drains.

There is no pipe-borne water in the village and the only one to which the people have access is situated at Atimpoku, about 200 meters away and they have to cross the major
Kpong-Akosombo Road to fetch the water. There are no public latrines in the community and like the pipe situation have to cross the road.

On entering the community, one observes a heap of rubbish on which people indiscriminately defecate. Such indiscriminate dumping of rubbish and defaecating was a common site.

Some of the children were seen near the lake engaged in such activities as swimming, fetching water and washing of clothes.

4.3.2. South Senchi

South Senchi is a VRA resettlement village located about 10 kilometers from Akosombo and 16 kilometers from Kpong. It stretches from about 100 meters from the shore to about 500 meters away from it. It was originally a farming land for the people of Senchi and Akrade before the dam was built. However, because of the inundation of their original lands, this land was acquired by the VRA and houses, sanitary and portable water were provided for the affected people during its construction in 1977. The people are mainly Ewes who migrated from the Battor and Mepe area with their main occupation being fishing and subsistence farming.

The buildings in this community are cement and bricks but with occasional mud houses. There are roads and one can easily observe that the village was planned.

There are 26 standpipes but at the time of this study, only 11 were functioning. There are 11 public latrines (KVIP) in the community.
The general environmental sanitation in this community was better with observed sites of refuse damps. A few children were seen loitering near the lake but were neither swimming or fishing.
5.0. DISCUSSION OF RESULTS

Questionnaires, if not carefully constructed and administered, can result in the collection of biased data (34) and it is virtually impossible to remove all bias due to the natural desire on the part of the respondent to please or impress the enumerator.

This must therefore be taken into account when interpreting KAP studies. The advantage however is that such surveys provide a useful tool to obtain important relevant data on the community which is difficult to obtain by other methods.

The lack of adequate sanitation facilities is a problem common to virtually all developing countries including Ghana. There has been a considerable amount of health education (HE) regarding sanitation and hygiene in all areas in Ghana and this is shown by the almost unanimous wish to have latrines in their community by the people of Dzidzokope and the lack of this facility as one of their main problems. The people of Dzidzokope have to walk a distance of about 1 km across the main road before they can have access to a toilet facility. This results in a great number of respondents in Dzidzokope (25%) using the bush as an alternative compared to 2% in South Senchi which may influence the prevalence in these two communities.

An observation, which was made from this study, which may have contributed to the relatively lower prevalence of South Senchi, may be the layout of the houses and the
availability of more amenities such as water and toilet facilities. During resettlement, the scheme was aimed at transforming the subsistence economy of the settlers into commercial cooperatives based on the Convention Peoples Party (CPP) seven-year development plan (35). Each family was provided with a core house, while the provision of roads, schools, sanitation and water were also made.

The non-availability of pipe water in Dzidzokope accounts for the use of the river for their different domestic activities.

Workers in Zimbabwe (36) and in St. Lucia (37) have shown that different contact points are used for different activities by different social groups within the community. While almost all the respondents in South Senchi use pipe water for their domestic activities, in Dzidzokope, 69% use pipe for drinking, 44% for cooking, only 20% for bathing and as low as 16% for washing. This observation may be due to the non-availability of the facility in the community and the importance attached to the use of water for that activity.

MacDonald has shown that sanitation alone may not play a very significant role in the control of schistosomiasis. However, as an adjunct to a control programme based on other measures, it increases the probability of success of other measures and is equally effective in reducing the risk of re-introduction following successful control (38). Thus to obviate the prolonged use of drugs it is important that control programmes are aimed at long term control through improved sanitation, water supplies and education which serve to reduce the risk of re-infection.
Another important factor for which more attention must be directed in schistosomiasis control is the location of communities relative to the source of infection. MacDonald (38) in his model of *S. mansoni* transmission assumed that, there was a threshold level of exposure below which the transmission cycle could be broken. Thus reducing or eliminating the activities that bring about water contact may result in a break in the transmission cycle. It is expected that, the further a community is located from the source of infection, the less contact there will be with the infected water. Zuta (39), observed in his study on the prevalence of schistosomiasis in communities along the Weija Dam that, those further away from the lake had lower prevalence than those nearer to the lake. Ashitey et al (25) also confirmed this observation in their study in the Suhum District around the Densu River and its tributaries.

The present study confirms these findings in that the community with a higher prevalence (Dzidzokope) is located just near the source of infection while that with a lower prevalence is comparatively further away from the river source.

Basic facts about the life cycle of schistosomiasis are poorly understood by both the young people and adults in both communities, with only 22% in Dzidzokope and 29% in South Senchi admitting having any knowledge about the transmission. But of those who admitted having knowledge of how the disease was transmitted, only one person in each community could actually show how the disease was transmitted (4.6% in Dzidzokope and 3.4% in South Senchi). This shows that even though they claim to have the knowledge of transmission, they actually don’t know.
However, a majority in both communities (80% in Dzidzokope and 86% in South Senchi) still associated the disease with contact with some form of water-related behaviour. This response was similar to those expressed during the FGD and this is a good indicator for successful community support for action connected with water supply.

*S. haemotobuim* is the most common species of schistosome in Ghana and the study area. Knowledge of symptoms is related to those associated with *S. haematobuim*, with blood in urine the most frequently mentioned in both communities (87% in Dzidzokope and 80% in South Senchi). This knowledge is closely related to that of respondents who felt that schistosomiasis was a problem in their community (90% in Dzidzokope and 69% in South Senchi) and was common in their village (86% in Dzidzokope as against 68% in South Senchi) and presence of bilharziasis in the family. This higher knowledge of symptoms by respondents of Dzidzokope is probably derived more from experience than from teaching.

Farooq et al (22) found that occupation influenced prevalence, with the highest prevalence among fishermen and boatmen, two high risk factors. In the present study, practices of the respondents were considered as factors, which increase the susceptibility of one being infected. There was a clear relationship between respondents having schistosomiasis as a problem, household’s infection and practices such as swimming, urinating in the river, fishing in the river and standing and washing in the river. The chances of getting infected are related to the type of activity and the frequency with which it is undertaken. Swimming is the activity in which maximum body surface area
gets into contact with the water and for longer periods of time, hence its association with a high rate of infection.

Chandiwana (36), working in Zimbabwe found washing of clothes to be the most common activity which accounts for the most time spent at water contact points and therefore this activity is likely to be a major factor in schistosomiasis transmission. These observations have been found to be true in this present study where it is noted that the respondents from Dzidzokope (89%) indulged in such practices more often than those from South Senchi (56%) and this can be a contributory factor in the difference in prevalence.

It is now well known that schistosomiasis control can best be achieved by an integrated method of control. This includes morbidity control, snail control, environmental manipulation, provision of safe water, good sanitary conditions and health education. However, because of the cost involved in undertaking this approach of control, it was agreed upon the discovery of praziquantel by the WHO Expert Committee (6) that, the control of morbidity using chemotherapy should be the global strategy for the management of schistosomiasis. The VRA conducted mass chemotherapy in these communities in 1997 and in 1998 conducted a survey again but found the levels of prevalence in Dzidzokope high enough to warrant serious concern. This observation shows the maintenance of the transmission of schistosomiasis in spite of regular chemotherapy in these communities. This has shown that transmission of schistosomiasis was still maintained and this is in accordance with studies conducted by Ouma et al (40),
Kardama et al (41), and Sellen et al (42). All these researchers concluded that, mass treatment was unable to stop transmission of schistosomiasis due to the high level of re-infection. This reduces the cost effectiveness of chemotherapy considerably. Consequently, it would be worth while considering the development of other cost effective control methods, which can be used concurrently with chemotherapy.

Knowledge of measures for the control and prevention of schistosomiasis among respondents from both communities were relatively good but comparatively, South Senchi was better than Dzidzokope. As many as 85% in South Senchi know that not bathing in the lake is a preventive measure while 56% do agree to this in Dzidzokope. Further, 63% in South Senchi as against 41% in Dzidzokope agree that not swimming in the river was a form of preventive measure.

However, there was very little difference between the 2 communities concerning the use of drugs and provision of toilets as control and preventive measures.

This observation could be explained by the fact that those in South Senchi, a resettlement town, are more exposed to mass treatment and health education by the VRA staff than those in Dzidzokope, a fact further supported by the participants of FGD in Dzidzokope about non-regular treatment by the VRA staff. In fact, none of the respondents to the questionnaire in Dzidzokope identified a VRA staff as a source of information concerning knowledge of schistosomiasis.

It is essential that Health Education is done in communities in which schistosomiasis is endemic. Hesham et al (43) in Egypt found favourable decreasing trend in prevalence
and infection levels of *S. haematobium* infection in the Nile Delta and attributed this change to increased availability of praziquantel and the use of the mass media by the Ministry of Health to educate people about prevention, symptoms and treatment of schistosomiasis.

In this study, education on schistosomiasis was poorly rated as a preventive and control measure by members in both communities. Also it was considered not very important especially by respondents from Dzidzokope, to be educated about the disease when one contracts the disease, anyway.

These responses from both communities show that they attach less importance to health education. Dr. Ane Haaland, responsible for health education at the Tropical Disease Research Unit of the World Health Organization (WHO) believes that the reason why health education tends not to work is that it is badly done. "*What happens*," she said "*is that health agencies believe that telling people about the schistosome life cycle will somehow change attitudes and behaviour. For example in Cameroon, a poster was used to explain the disease, but research later discovered that hardly anyone understood what it was saying*". (44).

It is important that people’s knowledge, their attitudes and practice be studied in considering schistosomiasis control. It was observed in Kenya in 1995, that people know about schistosomiasis and intestinal worms. They also believed that intestinal worms
could be prevented whereas schistosomiasis could not. Thus, with this belief nothing would be done by these people to prevent the disease (44).

It came out from this study that though respondents from both communities considered health education on schistosomiasis not a priority in control activities, they were able to associate the disease with the river. Also, it emerged from this study that though they knew infection came from the river, they were not clear in their minds about the exact nature of the causative agent present in the water.

This observation emphasizes the need for regular re-enforcement of information on health issues, especially schistosomiasis in this case, as it appears that the health education given to the children on schistosomiasis by the VRA and in the schools are not adequate enough or not getting down well to them.

This study has shown that KAP surveys, as with behavioural studies of water contact, may be difficult to compare between different communities due to social and cultural differences. However, in this study, the observed differences between the two communities concerning the availability of water and sanitary facilities, the location of the communities with respect to the source of infection, the general environmental situation and the practices of the people has been identified as factors contributing to the difference in prevalence in the two communities.
CHAPTER SIX

6.0. CONCLUSIONS AND RECOMMENDATIONS

6.1. CONCLUSIONS

The ultimate goal in the control of filth-borne infections such as schistosomiasis is to break the chain of transmission by bringing about a change in the environment and faulty habits of the people involved. Many such changes are needed in areas where these infections are endemic and resources limited. This study, undertaken through a KAP on schistosomiasis with a view to finding reasons for differing prevalence in 2 communities has provided some insight into essential activities, which must take place to ensure the success of any control programme.

In this study, the effect of provision of water supply is clear. The potential value of good water supply and sanitation in schistosomiasis control cannot be over emphasized. The role of the environment has also been found to have played a part in the high prevalence in Dzidzokope.

The study has revealed a gap between knowledge and practices, with regards to risk factors. The study populations have a high knowledge about schistosomiasis, the source of infection and its control, but their practices are not consistent with what is expected with this level of awareness especially in the Dzidzokope community. Even where facilities such as toilets and safe water are available, the practices of the people still pose
a threat to infection. This brings in the question of behavioural change as an important component in the control of schistosomiasis. Knowledge about the mode of transmission is generally limited though they associate the disease with the River Volta and it is important that this is stressed to the community concerned.

The study has revealed that the study populations do not associate the disease with any cultural or supernatural beliefs. The people have expressed the wish to be part of a programme to solve the schistosomiasis problem in their communities but find themselves inadequate to do so in their present circumstances.

On the whole, the present study forms a contribution to the information available concerning the role of human water-contact patterns in the transmission of schistosomiasis by elucidating the role of environmental factors and human behaviour to the transmission and epidemiology of schistosomiasis in the Asuogyaman District.

6.2 RECOMMENDATIONS

On the basis of the study findings, the following recommendations are made:

1. It is suggested that all new settlements should be located fairly distant from the shores of the lake in order to reduce frequency of entry of the people into the water. These settlements must be provided with adequate water in order to discourage them form indiscriminate entry into the lake.
2. The present situation of the disease in the Volta Lake cannot be viewed with optimism. It is realized that to prevent continuing transmission of the disease, a long term education programme combined with effective sanitary measures including an efficient disposal system for excreta, a safe water supply and adequate bathing and washing facilities, if necessary. The role of the DA is important in this aspect to help the communities to provide toilets and water facilities for themselves.

3. Health education should stress on the mode of transmission of the disease schistosomiasis in order to achieve maximum cooperation from the citizens, as their knowledge concerning this aspect is poor. Radio Hydro, the local FM station should be used to broadcast messages in the local languages on schistosomiasis, its transmission and prevention by health workers of the DHA and staff of the Schistosomiasis Control Unit of the VRA.

4. The VRA should provide treatment to all members of the community at the same time on their outreach service. The present situation where they go to a school, treat the school children and leave out the adults and non-school children is not helping the control programme. Most of the adults especially the fishermen are also infected and they urinate and defecate in and around the river on their fishing expedition.

5. The DHA and the VRA should coordinate and cooperate in the control of bilharzia in the district. Together both agencies can organize mass treatment exercise for both children and adults in the district. In some cases the VRA can release some of its drugs to the DHA for periodic mass treatment.
6. The Lakeside Health Unit, which is responsible for bilharzia control, should make available its health data to the DHA for record purposes and to enhance coordination.

7. The DHA should help communities to establish Village Health Committees in the district to enhance health education and community participation in health programmes.
REFERENCES


APPENDIX 1

QUESTIONNAIRE

UNIVERSITY OF GHANA
SCHOOL OF PUBLIC HEALTH

A STUDY OF SOME FACTORS AFFECTING THE PREVALENCE OF SCHISTOSOMIASIS IN 2 RURAL COMMUNITIES IN THE ASUOGYAMAN DISTRICT.

Date of Interview ____________________
Place of Interview ____________________
Name of Interviewer _____________________________

Village _________________________ School (if any) ____________________

You are kindly requested to assist in the study of the above topic by answering some questions relating to the study.
You will not be identified as an individual and your responses will be treated as confidential.
Thank you for your co-operation and participation.

A. GENERAL INFORMATION

1). Age (Years) _________________ Class ____________
2.) Sex (✔)  a) male       b) female
3.) Ethnicity (✔)
    a) Akan       b) Ewe
    c) Krobo      d) Other (specify)_______________
4) Religion (✔)
5) Place of birth (✓)
   a) This village
   b) Another village in this region
   c) Another place (Specify)

6) How long have you lived in this village _______years

B. SANITATION
7) Do you have a toilet in your house? (✓).
   a) Yes  b) No

8) If No, where do you and members of your household usually defecate? (✓)
   a) In the bush
   b) Public latrine
   c) Other (specify)

9) If yes, what type of toilet facility do you have in the house? (✓)
   a) pit latrine  b) water closet
   c) Pan Latrine  d) KVIP
   e) Other (Specify)

10) Do you want a toilet built in your house? (✓)
    a) Yes  b) No
    c) Give reasons

C. WATER SUPPLY
11) Which of the following do you have in your village? (✓)
    a) stream/river  b) pond
c) bore-hole/well  d) pipe-borne water  e) other (specify)____________________

12) Where do you get water for the following?
   a) drinking__________________
   b) bathing___________________
   c) washing___________________
   d) cooking___________________
   e) gardening_________________

D. KNOWLEDGE

13) What sort of disease affect your community most?_________________________________

14) Have you heard of bilharzia? (✔)
   a) Yes  b) No

15) If yes, through whom did you hear about it? (✔)
   a) neighbour  b) family
   c) health worker  d) VRA worker

16) How would you know that one has bilharzia?(✔)
   a) blood in urine  b) blood in stool
   c) weight loss  d) headache
   e) other (specify)

17) What is the local name for blood in urine?_______________________

18) Do you think it is a disease? (✔)
   a) yes  b) no  c) I don’t know

19) Are you aware that sometimes people do urinate blood? (✔)
   a) yes  b) no  c) I don’t know

20) Is this common in your village?(✔)
a) yes  b) no  c) I don’t know

21) Which members of your family have ever had blood in their urine? (√)
   a) myself  b) brothers  c) sisters  d) parents

22) What causes the blood in urine? ______________________________

23) Do you have any knowledge of the transmission of the disease? (√)
   a) Yes.  b) No. If No, go to Q.25

24) If yes, how is it transmitted? ______________________________

25) How does one get the disease? (√)
   a) fetching water from the river/stream
   b) swimming  c) bathing  d) fishing
   e) other(special)______________________________

26) How can the disease be controlled and prevented in the community? (√)
   a) not bathing in the lake
   b) not swimming in the lake
   c) Clearing our surroundings
   d) Providing toilets
   e) Providing pipe-borne or potable water
   f) Taking drugs
   g) Community education about the disease.
   h) others (specify)______________________________

E. ATTITUDE

27) If you have noticed blood in your urine, what did you do? (√)
   a) Informed parents
   b) Sought treatment in clinic/hospital
   c) Went to a traditional healer
   d) Bought a drug and took it
28) What should be done to somebody who has blood in the urine? (✓)
   a) be given a drug
   b) not allowed to go near the river/stream
   c) be educated about the transmission of the disease
   d) be sent out of town
   e) others (specify) ________________________________

29) What is your attitude towards those who have blood in the urine? (✓)
   a) do not want to be near them
   b) will not eat or drink with them
   c) not fit to stay in the community
   d) others (specify) ________________________________

30) Do you think blood in the urine is a problem in your area? (✓)
   a) Yes    b) No    c) I don't know

F. PRACTICE
31) Do you sometimes swim in a river or pond? (✓)
   a) Yes    b) No

32) Do you sometimes urinate in the river or stream? (✓)
   a) Yes    b) No

33) Do you sometimes fish in the river or stream? (✓)
   a) Yes    b) No

34) Do you sometimes stand in the river and wash your clothes? (✓)
   a) Yes    b) No
APPENDIX 2

FOCUS GROUP DISCUSSION GUIDE

UNIVERSITY OF GHANA
SCHOOL OF PUBLIC HEALTH

A STUDY OF SOME FACTORS AFFECTING THE PREVALENCE OF SCHISTOSOMIASIS IN 2 RURAL COMMUNITIES IN THE ASUOGYAMAN DISTRICT.

Date of Interview _____________________
Place of Interview _____________________

You are kindly requested to assist in the study of the above topic by answering some questions relating to the study.
You will not be identified as an individual and your responses will be treated as confidential.
The tape recorder is to help me re-write your responses accurately.
Thank you for your co-operation and participation.

1. What are the main problems affecting your village?
2. Mention the common health problems in your village?
3. Have you heard of bilharzia?
4. Through whom did you first hear about it?
5. What do you think causes it and the result of the disease?
6. Do you think bilharzia is a problem in your area/community? Why?
7. Has the Nurses/health workers or the VRA workers been coming here? And what exactly do they do?
8. How useful would you say the activities of the VRA workers have been with respect to health?
9. What do you think are the reasons for the high prevalence rate of the disease in your community?

10. Why do people still go to the river when you know that it’s the river that gives you the disease?

11. Would you like a latrine and/or pipe-borne water built in your community or houses? And why?

12. What do you think should be done by the Government or the VRA to help in the control of the disease?

13. What has the community by itself done to limit and control the spread of the disease?

14. Would you like to take part in any community programme aimed at controlling the spread of the disease? Give reasons for your answer please.

15. Do you associate the disease with any cultural or superstitious beliefs?