"PERCEPTIONS OF HAEMATURIA AMONG THE LUO OF BONDO DIVISION, SIAYA DISTRICT, KENYA"

By

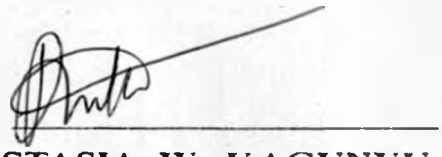
ANASTASIA WANJIKU KAGUNYU

A THESIS SUBMITTED TO THE INSTITUTE OF AFRICAN STUDIES IN PARTIAL FULFILMENT FOR THE REQUIREMENTS OF THE DEGREE OF MASTERS OF ARTS (ANTHROPOLOGY), UNIVERSITY OF NAIROBI.

JULY, 1997

DECLARATION

This Thesis is my original work and has not been presented for a degree in any other University



ANASTASIA W. KAGUNYU

This Thesis has been submitted for examination with my approval as university supervisor.

Dr. W. K. Omoka

University Supervisor

DEDICATION

Dedicated to,

My children, stanslaus Kagunyu Gatura and Eunice Wamiru Gatura, who had to do without their mother for some months and to my husband Joseph Gatura for his inspiration and encouragement through out my graduate studies.

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENT

I greatly appreciate the assistance and understanding extended to me by many people in the course of the study. While I cannot mention all of them it is no way suggests that the assistance of those not mentioned by name is less appreciated.

First and foremost I wish to thank Nairobi university for awarding me the post graduate scholarship. Next thank KEDAHR for funding this study.

Special thanks goes to my supervisor Dr. W.K. Omoka who unreservedly offered unrivalled guidance without which the study would have been a veritable fiasco. My appreciation goes to the director of the Institute of Africa Studies Prof. Simiyu Wandibba for consultation.

My thank also extend to doctors Leunita Muruli and Dr. Steve Nangedo for their invaluable assistance, to Dr. Jns Aaagard for his positive critism and KEDAHR staff as a whole.

My deepest regard goes to Mr. Nyadega Geography department for his assistance in computer data analysis, similar regards to John Kuria for giving a hand in typing.

My appreciation is extended to chief Nyadimo for creating the right working atmosphere. Lukas Odudo who acted as an interpreter/interviewer. A special thanks goes to all those who participated in providing data for this thesis. A note of thanks is extended to my colleagues Mr. Rosh Were and Benson Mlemi for chairing their research experience with me. To my husband goes special vote of appreciation and inspiration throughout the period of the study. Finally a word of thanks to my parents fro providing me with nothing but the best. However any shortcomings in this thesis are entirely my own responsibility.

ABSTRACT

This study is the investigator's attempt to describe the perception of blood in urine (haematuria) among the local people of Bondo Division Siaya District. The study was carried out in Got Abiero Sub-Location in Bondo Division.

The major objection of the study was to provide useful background information for policy makers, health planners and initiators of rural health intervention programmes and researchers interested in public health in rural areas. In particular the study attempted to examine the relationship between people's traditional practices and their health, their traditional attitudes towards the presence of blood in urine, whether sex is a factor in getting infected by schistosomiasis haematobium, and whether some sanitaryconditions facilitate schistosomiasis haematobium infections.

It was hypothesized that schistosomiasis haematobium infection is related to contact with water bodies; associated with gender based kinship roles; associated with sanitary conditions; and the folk aetiological notions of the study are.

As a theoretical framework socializing theory was used to explain people's perceptions in relation to blood in urine. A sample of one hundred and fifty respondents was drawn using non-probability sampling technique. It include both adult males and females. The data were collected through structured questionnaire interview, non-participant observation and key informants. These data were analysed by frequencies and cross tabulation.

Findings suggest that blood in urine is prevalent in the study area since more than half of all those people who were interviewed indicated that they have seen blood in their urine, at one time or the other, and that they had cases of blood in urine among their school going children.

The data analysis revealed that the disease is well known in the region since its local name was given as aremo and again traditional herbs for treating it were known by almost every respondent.

Study came up with the following results ponds and streams are used in the study area and they act as source of Schistosomiasis infection; gender based kinship roles facilitate individuals' coming into contact with contaminated water, lack of sanitary facilitates the rate of infection in the study area since more than half of those who were interviewed lacked latrines in their homes and they excrete anywhere. Last but not least the local people lacked

full knowledge of how schistosomiasis is transmitted, and even if they had the knowledge that it is a water-borne disease they still use the same water bodies since they don't have alternative water sources.

Therefore it is recommended that safe water should be provided in the area, foot bridges should be constructed across streams so that people do not come into contact with contaminated water while crossing, snails should be killed using molluscides, the sick should be treated to prevent further spreading. Health education should be introduced in the area and the health educators should emphasize on causes and prevention of common diseases, eg. diseases which results from malnutrition, unhygienic food, water and poor sanitation.

CHAPTER 1

INTRODUCTION

0 INTRODUCTION

Schistosoma is a blood fluke which can be grouped into three species; schistosoma haematobium which is prevalent in Africa, schistosoma Mansoni which is seemingly confined to south Africa, and Schistosoma Japonicum which occurs in far East. The splender flukes inhabit and reproduce within the blood vessels of the intestine and urinary system. The eggs give rise to Miracidia which must contact the intermediate host (a fresh water snail) within 24 hours if they are due to survive. Cercariae Larvae. Larvae, released from the snail, must gain entry into the human host within two to three days if the life cycle is to be completed. Blood fluke schistosoma has been and still is a major scourge of the tropics.

This study covered Schistosomiasis haematobium which is caused by schistosoma haematobium. It was discovered first in Egypt by Bilharz in 1852. Schistosomiasis haematobium is the name which is going to be used throughout this study instead of Bilharzia. It is a disease which infects human beings when they come into contact with infected water. In areas where the diseases is known to occur a person who is infected has blood in urine, especially the last drops.

Due to the poor sanitation Schistosomiasis in any form continues to increase since in certain parts of the world faeces are used as fertilizers and it is customary for people to urinate and defecate into rivers and streams; indeed, in some places latrines are constructed over running streams.

Further down stream the same water may be used for bathing or irrigation with obvious risk of infection. Farm labourers working in the rice fields or involved in the irrigation projects are at particular risks.

Ironically the implementation of irrigation projects such as was made possible by the construction of the Aswan High Dam in Egypt has increased the incidence of schistosomiasis. On the other hand knowledge of the life cycle has raised the possibility of various control measures.

1.1 STATEMENT OF THE PROBLEM

The problem of this study was to give a description of perceptions of haematuria or blood in the urine among the local community in Bondo Division. Local communities' perceptions may either help the spread of a disease or its eradication. Africa Health Congress held in Nairobi on 5th February, 1996 declared that in Kenya some Coastal communities have myths that help spread schistosomiasis haematobium since its symptoms (blood in urine) is regarded as a sign of maturity among adolescent boys and unfaithfulness among couples. The disease is also associated with eating too much pepper because of a painful sensational experience when passing urine, as well as chewing too much sugarcane.

In South Sakwa in Bondo Division where the disease is prevalent some people associated it with eating 'Sukari Guru", others were of the opinion that once somebody has seen blood in his/her urine he/she will never be affected again. These cultural beliefs inhibit complete eradication of schistosomiasis haematobium. Survey carried out by KEMRI (Kenya Medical Research Institute) Nad JICA (Japan International Cooperation Agency) in 1994 revealed that people in Kwale and Kilifi still held onto such myths as explanations for the disease despite rigorous awareness campaigns.

Research Questions

This research, carried out in Bondo, addresses the following questions:

I) Do the people in the area know how they can get infected?

ii) Do they have traditional ways of treating blood in urine?

iii) Do they think that both males and females can have blood in urine?

iv) Are there traditional customs which if somebody breaks he/she gets infected by schistosomiasis haematobium?

v) What social, economic and cultural factors bring them into contact with water bodies which are likely to be infected with schistosomoasis haematobium?

1.2 OBJECTIVE OF THE STUDY

GENERAL OBJECTIVE

To provide useful background information for policy makers, health planners and initiators of rural health intervention programmes, and research interested in public health in rural areas.

1.3 SPECIFIC OBJECTIVES

I) To examine the relationship between people's traditional practices and their health.

ii) To examine their traditional altitudes towards the presence of blood in urine.

iii) To determine whether sex is a factor in getting infected with schistosomiasis haematobium.

iv) To determine whether sanitary conditions facilitate schistosomiasis haematobium infection.

1.4 JUSTIFICATION OF THE STUDY

The need to undertake research in Bondo Division stemmed from the fact that various researches have been carried out elsewhere in Kenya (Machakos, Taveta, Coast Province, along the shores of Lake Naivasha) and indicated that schistosomiasis related diseases are rampant in the country and about one million people are infected by schistosomiasis. The result of the study will be valuable to the ministries of education and Health in terms of measures geared to controlling the parasites that cause the disease.

In Kenya there is a great campaign to provide water for irrigation in rural areas to boost agriculture production and provide human beings with water in drought stricken areas. These irrigation schemes could also provide breeding grounds for snails and mosquitoes and due to human contamination of water they spread schistosomiasis through not intended. This will provide the planners with the side effects of such development programmes, be they in rural or urban areas as to how they can come with preventive measures.

Last but not least no one had carried out an Anthropological study in Bondo and since there is a cultural dimension to health problems such as the one in question it is imperative to carry out anthropological research for the purpose of finding out the degree to which blood in urine is a function of the culture and social life of the residents of Bondo Division.

CHAPTER 2

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.0 THEORETICAL FRAMEWORK

This study was guided by socialization theory. Socialization theory has roots in three fields i.e sociology anthropology and psychology (Golsin 1969).

Brim (1966) defines socialization as the process by which individuals acquire the knowledge, skill and dispositions that enable them to participate as more or less effective members of groups and the society. According to Musgrave (1951) socialization is referred to when a situation is defined or clarified to the new comers to any group or where the mutual behavioural expectations or roles are learnt.

Social learning starts during childhood throughout the life cycle and within each of the various groups and organizational contexts that provide settings for social behaviour.

The assumption behind the socialization theory is that human behaviour is learnt and that human behaviour does not occur in social isolation. Even acts performed when an individual is alone e g reading, eating, urinating, taking a shower, shaving e.t.c. are to a large extent influenced by significant others in the individuals life space.

Another assumption behind socialization theory is that it takes place in a social environment and the leaner is an integral part of the environment. To a variable but nonetheless considerable extent therefore the individual helps to shape his own social environment and in an important respect becomes socializers as well as socialize.

The last assumption behind socialization theory is that it enforces established patterns, helps in the adoption of new ideas and ensures minimal deviation. The individual are rewarded if they conform to the established norms and they are punished if they fail to conform. Thus both rights and duties are to some degree spelt out in advance by the community. If then socialization is the process of learning social norms, beliefs, skills, role playing and behaviour pattern then it is hoped that this theory will shed some light on how individuals come to adopt certain perceptions regarding diseases and curative methods

People's perceptions and practices are acquired through socialization. By and large culture is the determinant of perceptions and practices of communities. Communities vary in their attitudes towards health and diseases mainly because of differential socialization. Individual might have a negative or positive altitude towards a disease. Through socialization also individuals in a community come to accept them without questioning.

In this respect the gender-role ideology which is natured through socialization places both men and women in their respective ascribed positions in society and this may bring them into more contact with water bodies which are infected with schistosoma eggs or not. Roles determine who performs what duties concerning water such as fetching water, fishing, washing, clothes.

Farooq et al (1966) found that in Egypt Muslims show a greater prevalence of Schistosomiasis infection than Christians because of their occupation. A majority of Muslims are fishermen and due to this they are prone to schistosomiasis haematobium that Christians.

Poor sanitation leads to pollution of water bodies in both rural and urban areas. Cultural differences and gender role assignment do make for negative altitudes towards the use of latrines. Members of a given community may prefer defecating anywhere, especially in the bushes or near water bodies. In homes where there are latrines but cultural values forbid children to share latrines with their elders, children will likely continue using the bushes. Therefore parasitic diseases such as the one with which investigation was concerned will continue to spread to the general population.

Scoutt Barlow (1938), Weir, Wasif, Farooq, Allan, Abdel, Kaden (1952) show that when " Sanitation" is accepted it should lead to reduce prevalence of schistosomiasis haematobium and Mansoni and other helminths.

Farroq (1966) expressed the feeling that latrines are poorly developed in the areas of poor social economic conditions. In Egypt he found that infection rates were high among the poor than those who had high socio-economic status.

2.1 LITERATURE REVIEW

From his earliest beginning man has sought ways to manipulate and control his environment and to create favourable conditions for his work, play and home activities. Be that as it may, environmental sanitation programs in many local health departments have not changed despite changes in life style. It is now apparent that if man is to have a suitable environment there must be concerned with the total management of the natural resources of water, food, land, air and saunders (1967).According to Malikabu (1980) man is the reservoir of most of the diseases that destroy or incapacitate him. Unsanitary disposal of faeces and urine is one of the most common sources of infection. The lack of safe water supplies and basic sanitation facilities, coupled with malnutrition poor and inadequate housing and poverty have resulted in a high morbidity and mortality within communities in the third world.

Due to lack of sanitation facilities in developing countries water can become polluted. The most common of the water born diseases from pollution are Typoid, Schistosomiasis, Cholera, Dysentery, Amoeba etc. In communities which defecate and urinate in the field they lack of knowledge about the germs causation of disease and the need to stop water borne diseases through the use of latrines. The availability of space in open fields in rural areas encourage the behaviour also, Social economic developments in Kenya just like in many parts of the tropical countries have led to an increment in the incidence of vector borne diseases in general and in particular Schistosomiasis and malaria. This is per the report of FAO/WHO/UNEP 1988. In Areas where schistosomiasis is prevalent the people who are likely to be infected are those who frequent contaminated water bodies regularly. Since men must organize in order to obtain food and shelter, roles have been defined according to sex, age and common residence Banton (1969)

Through socialization individuals learn their roles in the society. Certain roles or tasks in almost all societies are assigned to men and others to women. Men tend to be given tasks which require much physical strength, such as cultivating, building houses, herding animals, fishing, hunting, mining etc.

Women are given those tasks which require less strength and they are considered to be less important. Their work includes; taking care of children, cooking, cleaning, laundry, fetching water. Women spend a lot of time fetching water for domestic purposes and washing clothes. Therefore if they fetch water in water bodies which are contaminated they stand a high chance of being by schistosomiasis haematobium than men. The women are given those tasks which require less strength and they are considered to be less important. The work includes; taking care of children, cooking, cleaning, laundry, fetching water. Mead (1974) argued that gender based kinship roles are complementary, but despite that being the case some of this kinship based roles expose some individuals to various diseases than others. For instance those people who cultivate in the rice fields where water is contaminated can also show a high rate of schistosomiasis infection than those who do not.

Schistosomiasis haematobium is a water based infection. It can be associated with other parasitic tropical diseases such as Malaria, Leishmiasis and Filariasis. Bilharzial worms or schistosomiasis were first discovered in Egypt by a German Doctor T.M. Bilharzial (1825-1863). The eggs of schistosomiasis are found in urine 6-8 weeks after the commencement of infection. Being large they are easily discovered after centrifugation.

HOW SCHISTOSIMIASIS HAEMATOBIUM IS SPREAD

A person suffering from schistosimiasis haematobium has schistosimiasis eggs in his/her urine. In Kenya the urinary type of Bilharzia is the commonest. When infected people urinated in or near stagnant water, pond, lake or stream which contains snails' eggs are passed into water with urine. The eggs hatch in water and small larvae fish-like organisms (cercariae) leave the snail and enter into water. If a person wades or swims in this water, this

fish-like organisms will pierce his/her skin and enter the body thereby giving the person schistosimiasis haematobium. Inside the human body the organism travel to the liver where they grow to adult schistosomiasis worms which pass eggs into the bladder to be passed out again during urination and in this way lead to infection of more people (Farooq 1966)

Disease Symptoms

(a) Blood is seen in the urine especially when passing the last drops.

(b) Pain may occur in the belly and between the legs, it is usually worst at the end of urinating.

(c) Low fever and itching may occur.

(d) After months or years the kidney may be badly damaged causing general swelling and death.

Schistosomiasis haematobium is present throughout Africa except in frankly desert regions. It also occurs in fertile regions of Mesopotamia and in some parts of the British Commonwealth like India, Australia where it has been imported by soldiers returning to their native lands. In a fascinating presidential address to the American society of parasitologist entitled " This wormy World" stoll (1947) presented estimation of the actual extent to human helminthiasis throughout the world. Bilharziasis were also follows, schistosomiasis Japonicum 46 million persons affected, schistosoma haematobium 39 million affected, Mansoni 29 million. Africans were the most affected.

Snails of the genus Ballinus sub-genus Physopsis. The snails principle vector snail of schistosoma haematobium. The snails have a wide range of habits which may be permanent or temporary, these include staying in dams, canals, furrows such as drainage canals, reservoirs and storage dams for irrigation schemes, pools along wells caused by water, rivers flooding during heavy rains and depressions. Thus in general they inhabit shallow waters with organic content, moderate light penetration, submergence aquatic vegetation and abundant micro-flora. The snails my be found in isolated habitats quite independent of drainage systems because their eggs are sometimes carried passively to such habitats by running water. They can survive for prolonged periods out of water in a state of dormancy.

Webbe and Msangi (1958) working in Tanzania showed that they can survive for a period of five to eight month respectively and immature infections by Schistosomiasis haematobium have been found in such snails according to webb 1962. B. (p) Africanus (Krauss) extend all over most parts of Kenya. They are found in Coastal Province, Kitui and

achakos districts, warmer parts of Kiambu and Murang'a district and most parts of western Kenya. Schistosimiasis eas
Mansoni as it is the case in Kitui, Machakos, Taveta, lower elevations of Kiambu, Murang'a district and western Kenya
he prevalence of Schistosimiasis infection in Coast Province is high especially along the Costal Margin, Sabaki, Tana
ver and other small rivers. A recent survey at a school in Shimba hills revealed that all pupils were infected (Vogel
uller, Odingo Onyango, 1974: (page 352).
long the river 78% were found passing haematobium Ova while the rate in drier areas was 53%. Along the lake Victoria
gion the disease is almost common among fishermen who tend to segregate at selected areas along the shores.
s a public health problem schistosomiasis or bilharzia rank very high throughout Africa and the disease may lower the
conomic output of members of a heavily infected community due to their absent from their working places and also being
ck and hence, not being able to work very well. According to watson (1948) schistosomiasis infection of the urinary
racks shortens the life of the suffers by 15-20 years or more enormously reduces the working capacity unless the sufferers
re given adequate treatment.Moreover somebody suffering from schistosomiasis haematobium is more susceptible to
ther infections. The community suffers a direct loss in the cost of maintaining hospital, medical and nursing staff and in
he purchase of medicines. World Health Organisation (WHO 1959, 1967) supports Watson view that schistosomiasis in
ny form is both a social and economic problem. In Egypt, China and Brazil a lot of public money is used to control
schistosomiasis. In Egypt it was estimated that schistosomiasis is costing the country twenty million pounds per year. The
problem is worse in Egypt whereby in lower Egypt over a period of one ear 22% of army recruits have been rejected on
account of physical defects whereas only 3% of those from upper Egypt have failed top pass.
n Tanzania, studies carried out by foster (1967) indicated that on a sugarcane irrigation scheme losses due to schistosomiasis
hrough absenteeism and treatment cost amount to pounds 600 annually. WHO (1950) indicates that schistosomiasis may
well rank after malaria and nutritional diseases as the greatest single medical factor making for human misery and poverty
in those areas it occurs
Schistosomiasis is recognised as a potential problem of developing countries where development projects such as dams are
constructed to provide water for irrigation and hydro-electric power generation
The rapid spread of schistosomiasis can be foreseen in Africa since there are so many small scale irrigation projects as well
as large scale dams. Every man-made lake harbours flukes and some variety of the disease blights every African country

Such man-made lakes are now called public health disasters. Rapid spread of schistosomiasis haematobium in the villages on the edge of newly established Volta lake in Ghana and the dangers of schistosomiasis haematobium and Mansoni in irrigation canals along the river Nile in Egypt and Sudan provide evidence of this. According to Webbe (1972) whether the local population is infected or not doesn't matter since workmen employed in such projects may introduce the disease. A case in point is Zambia where the risk of Schistosomiasis in Kariba dam was minimal because of low prevalence of the disease among the local population.

But ten years after the dam was completed the prevalence of Schistosomiasis haematobium and Mansoni amongst five to fourteen years old children in one settlement was 69% and 16% respectively (Hira 1969). The disease could have been introduced in the area by workmen on the project. Evidence of many places like Egypt, Zimbabwe, Nigeria and Sundan shows that Schistosomiasis is a major cause of morbidity and mortality in these countries.

The association of Schistosomiasis haematobium with water makes it stand out among the parasitic diseases since water is indispensable to life and lack of adequate supply of it constitutes a serious environment problem. This means that since water is needed by everybody, exposure of people to infection with water related diseases is extremely common UNEP (1981). Water related diseases specially those transmitted by faecal contamination and malnutrition are responsible for a high proportion of deaths among children under five years of age in many countries.

Schistosomiasis is seemingly never taken serious since primarily it strikes the rural poor and it poses no threat to the affluent urbanite; only those who frequent infection canal or lake water are likely to pick up blood fluke and only where sanitation is poor can the infection persist.

The other reason why Schistosomiasis is not taken seriously is because in some endemic areas the presence of blood in urine is considered normal and it is associated with " male menstruation" in adult (stanley 1975).

It is also associated with virility and so communities in such areas are unwilling to have their men treated. Schistosomiasis haematobium is associated with other diseases such as a cancer of the bladder and lungs related diseases. Rosenfield (1977) compared transforming peoples' landscapes without simultaneously transforming the sanitary conditions of their daily lives, with placing a shoe on one foot and leaving the other one bare.

CONTROL

In 1947 it was estimated that 39 million people in the world were infected by bladder fluke, 75 million by the intestinal worms. Recent research indicates that in Kenya one million people are affected. Schistosomiasis haematobium is the most common. Therefore there is a great need to prevent the spread of this disease. This can be done by killing the worms in the blood using drugs such as Nirdazole. Prevention can be achieved by using the molluscides such as Baylucide which kills

he water snails.

Without harming fish or other aquatic life. Scientists in pueto Roci have discovered that guppies feed voraciously on the ercariae thus opening up the possibility of biological control and in certain areas ducks that eat the snails have been roduced. In other places attempts have been mad to trap the snails by placing a canvas sheet across the river. However one of these methods has proved to be totally successful. The only permanent solution lies in educating people to change heir habits. Human urine and faeces should be prevented from reaching water likely to be used for washing, drinking vater and bathing water should be boiled. Man is the final and principle host and if his/her urine and faeces are kept away from water bodies this would prevent further spread of Schistosomiasis haematobium or any other form of Schistosomiasis ggs.

2.2 HYPOTHESES

The following hypothesis were tested

a) There is a relationship between Schistosomiasis haematobium infection and contact with water bodies among the local communities of Bondo Division.

b) Schistosomiasis haematobium is associated with gender based kinship roles of the local community in Bondo Division.

c) Schistosomiasis haematobium is associated with sanitary conditions of the local community of Bondo Division.

d) There is a close relationship between schistosomiasis haematobium infection and the folk aetiological notions of the ocal community of Bondo Division.

2.3 OPERATIONAL DEFINITIONS OF VARIABLES

All the variables were categorized as either independent or dependent. For each hypothesis it was assumed that a functional relationship exists between the independent variables and the dependent variables.

DEPENDENT VARIABLES

Schistosomiasis haematobium:

It is a disease which is caused by Schistosoma and it affects the urinary track. Somebody suffering from the disease has blood in his or her urine.

HAEMATURIA:

Presence of blood in urine

INDEPENDENT VARIABLES

(a) Contact with water bodies

It was conceptionalized as coming into close touch with water sources such as swamps, ponds, streams, rivers, dams etc.

These water sources are good breeding grounds for snails.

B. Gender based kinship roles:

They are conceptualized as duties assigned to individuals within the family and they are culturally defined.

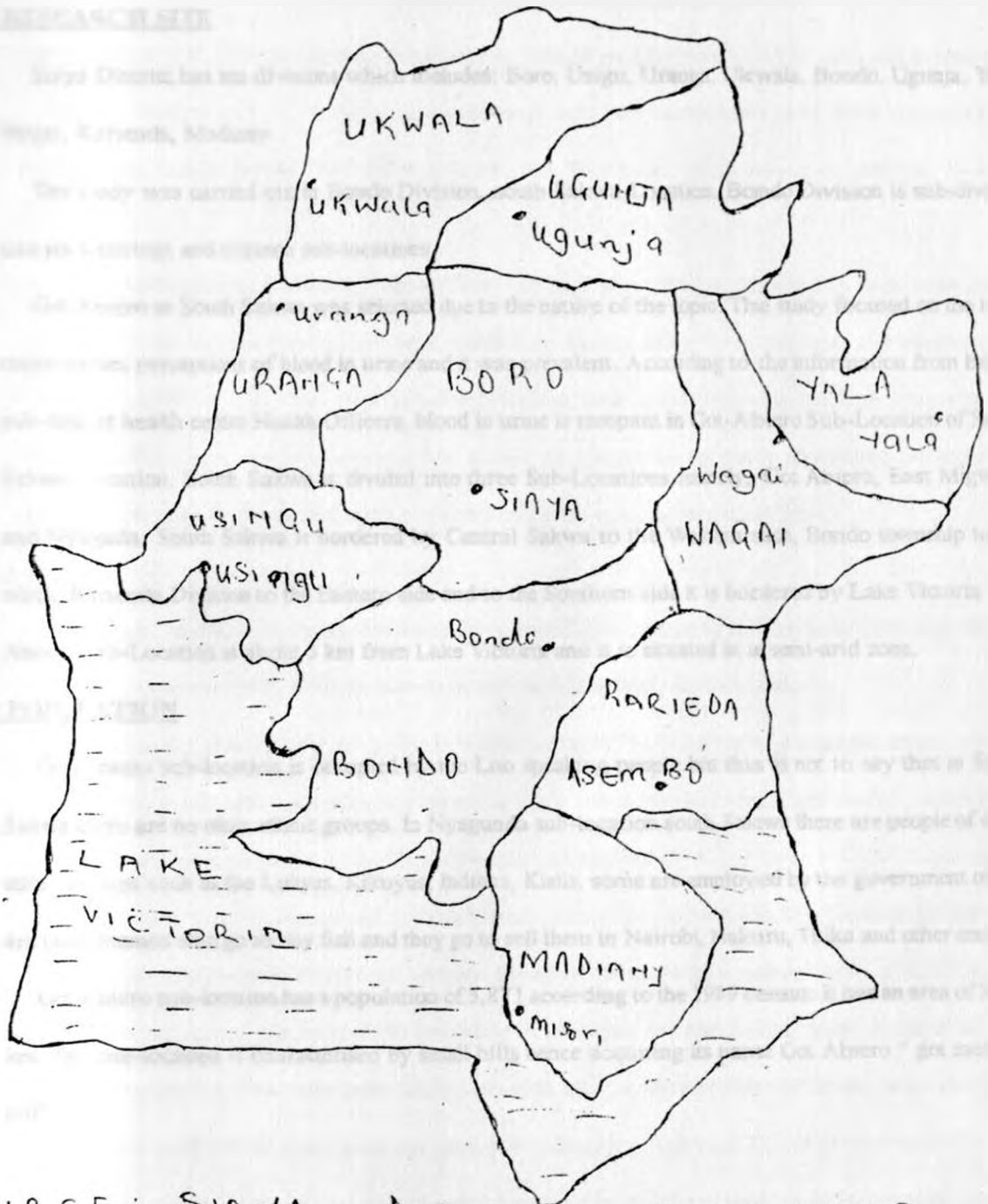
(c) Sanitary conditions:

It is perceived as the state of general cleanliness observed and the disposal of human waste.

(d) Folk Etiological Notins

It was perceived as what people think about the cause & cure of the disease.

SIAYA DISTRICT ADMINISTRATIVE BOUNDARIES.



SOURCE; SIAYA DISTRICT DEVELOPMENT PLAN 1994-1996.

CHAPTER THREE

METHODOLOGY

3.0 RESEARCH SITE

Siaya District has ten divisions which includes: Boro, Usigu, Uranga, Ukwala, Bondo, Ugunja, Yala, Wagai, Rarienda, Madiany.

The study was carried out in Bondo Division, south Sakwa Location. Bondo Division is sub-divided into six locations and thirteen sub-locations.

Got Abiero in South Sakwa was selected due to the nature of the topic. The study focused on the local communities perceptions of blood in urine and it was prevalent. According to the information from Bondo sub-district health centre Health Officers, blood in urine is rampant in Got-Abiero Sub-Location of South Sakwa Location. South Sakwa is divided into three Sub-Locations namely, Got Abiero, East Migwena and Nyaguda. South Sakwa is bordered by Central Sakwa to the Western side, Bondo township to the north, Rarienda Division to the Eastern side and to the Southern side it is bordered by Lake Victoria. Got Abiero Sub-Location is about 3 km from Lake Victoria and it is situated in a semi-arid zone.

3.1 POPULATION

Got Abiero sub-location is occupied by the Luo speaking people but this is not to say that in South Sakwa there are no other ethnic groups. In Nyagunda sub-location south Sakwa there are people of other ethnic groups such as the Luhyas, Kikuyus, Indians, Kisiis, some are employed by the government others are businessmen who go to buy fish and they go to sell them in Nairobi, Nakuru, Thika and other centres.

Got Abiero sub-location has a population of 3,871 according to the 1989 census. It has an area of 24sq. km. The sub-location is characterised by small hills hence acquiring its name Got Abiero " got means a hill".

3.2 HEALTH

Siaya District is ranked among the highest in Kenya with respect to infant mortality rate. In total the district has about forty nine health facilities. They are sponsored by different groups which include the Kenya government, Church missions organizations such as world vision, UNICEF care and private owners.

Bondo Division there is no hospital, but there is only one health centre and three dispensaries. The common diseases in Bondo Division include malaria, Diarrhoea, schistosomiasis, measles, cholera and typoid.

There is a big shortage of health care facilities and people travel along distances to seek for treatment. In Got Abiero sub-location there is no single health care facility. Majority of the local community members consult the community workers who are not well trained, each health worker in a village represents a whole clan. The other people who cannot make it to Bondo sub-district health centre because of the long distance, age and lack of money and poor means of communication use traditional medicine.

3.3 SAMPLING

The study covered Got Abiero sub-location in south Sakwa location borders lake Victoria to the South. The local community in Got Abiero moves to and from lake Victoria frequently.

The research site was identified by the Bondo sub-district Health officers because the nature of the study required the people to have some knowledge of the disease in the are and since there was no prepared data on those who had been affected no sampling technique was applied.

The unit of study was household male and female adults. It was held that the household is the decision making body even in terms of diseases, so it was thought to be the most important focus of attention since all individuals young and old come from the house hold. Again through socialization, children adopt their parents' perceptions of diseases hence interviews with parents were preferred. Parents were also preferred because they have a lot of experience. Non-probability sampling was used. Due to the shortage of time it was thought to be the only alternative since the researcher had spent a lot of time trying to locate the area where

blood in the urine is prevalent in Bondo Division in initial stages, this costed a lot of time and money.

All in all the researcher was able to interview one hundred and fifty from Got Abiero location. The researcher managed to get that number because any homestead which the researcher came across had an adult male or female was considered for the study.

3.4 DATA COLLECTION.

In data collecuon three methods were adopted.

1. Face to face interview,, interview using open-ended as well as close-ended questions.
2. Direct non-participant observation.
3. Key informants

FACE TO FACE INTERVIEWS

Kenneth (1974) defines an interview as a social exchange between the interviews and the respondent. Face to face interviews were carried out by the researcher with the help of open interpreter. The questionnaire had open ended and close ended questions. The closed ended were narrowed to multiple choice questions and other to "yes" or "no" responses. Open ended questions were used to extended the materials of the closed questions and others were used to enable the respondent to give as much information as possible.

Interviews were conducted in Dholou and the interpreter was giving the answers in English. Data collecuon using interview was done through visits from household to household in the study are and if an adult male or female was found he/she was interviewed. In case where a female was found in one household in the next household an effort was made to interview a male. In case where neither the adult male or female was interviewed an effort was made to revisit the household until one of them was interviewed.

The questionnaire had a total of seventy seven questions which were based on the four hypothesis. The interview used to take about forty five minutes to one hour depending on the respondent. There were some respondents who were telling very long stories in response to some questions. Some were telling things that had happened to them several years ago. The researcher and interviewers were in some cases succeeding in keeping the respondent to the topic but when they were defeated they could continue with the same problem. Such

respondents were wasting a lot of time but they had to be completed to show them that their ideas were interesting and for sparing their time to be interviewed.

The researcher used to review the questioner at the end of the day to check and double check that the identification numbers have been correctly entered in each appropriate place on the questionnaire. Misleading marks in the questioner used; eg. in case where a respondent would give an answer and then change his/her minds and gives another when the first one had already need recorded. The new response was carefully instead and the first one erased. One hundred and fifty respondents were interviewed.

DIRECT NON-PARTICIPANT OBSERVATION.

During the course of the research simple observation techniques were used. The researcher was interested in the general cleanliness of the compound, whether there were bushes around the household, whether there were latrines in the compound to confirm the answers which were given by the respondents. This was done by observing the compound directly before and after the interview was conducted. Reports on observation were conducted on daily bases. From the observation the researcher noted that most of the households were surrounded by bushes and that's where the defecate. They gave evidence that they defecate and urinate in the bushes or anywhere, and there was a clear indication of this since as the researchers were passing along some foot paths human wastes were visible and also the types of flies along the paths gave a clear evidence that human waste was thrown carelessly.

The researcher was also interested in the activities going on around the ponds, streams and other activities which would expose the local people to schistosomiasis haematobium infection. Informal visits were made at water points in the morning and evening with the aim of observing the people's activities.

Through this the researcher learnt a lot especially on peoples's activities around bodies. A number of activities performed around the water bodies were noted which include washing clothes, fetching water, watering animals, washing food crops such as cassava, washing bicycles, swimming and Christian baptism.

Bathing in the streams and ponds were and are still very common. The sex of observers had little influence on the people because the residents of Got Abiero are used to bathing in ponds and streams. But as a

precautionary measure, the observation was stationed in areas where the people could not notice that they were being observed. The number of people observed could not be determined since some people were observed almost daily.

KEY INFORMANTS

The key informant were eight in number, and they were interviewed at different places. They were not sampled but they were directly interviewed on identification. The aim was to solicit additional detailed information on the local people's perceptions on blood in urine. According to Barnard (1988) a key informant is more than someone who controls a lot of information about his culture and is willing to talk to the researcher. In this particular case they were people who were conversant with the community practices and perceptions regarding illness.

They include area local chief, two community health workers, a school headmaster, as school teacher, a nursery teacher and two village elders. An informal discussion was held with a health officer at Bondo sub district health centre at the initial stages of the study, who identified the research area for the researcher, that is where blood in urine was prevalent in Bondo Division. The response which were given by Bondo sub-district health officer were noted in the researcher's field note book.

The response of the eight key informant were jotted down on an interview guide which was prepared to accommodate their responses. The interview guide questions such as which are the most common diseases in the area? Whether the respondent has ever heard about schistosomiasis haematobium. Whether it is fatal? Whether they have indigenous ways of treating it, whether there are some activities which exposes a person to schistosomiasis heamatobium infection than others, where people who have blood in urine go for treatment? The questions on interview guide were very much related to the ones which were in the questionnaire. The researcher wanted to compare the responses of the key informants and the information of the one hundred and fifty respondents who were interviewed using the questionnaire to check whether there was inter-relationship and again to get more information on some questions. For instance, how blood in urine

came to the local area. A good number had said they don't know when the questionnaire was administered to them. But the researcher wanted to check whether the key respondents had the knowledge of where it came from.

3.5 PROBLEMS ENCOUNTERED.

1. Through the study was completed as per expected schedule, several problems were encountered in the preparatory phase and in the course of the work. In the initial stages of the study Central Sakwa was identified as the area where blood in the urine was rampant but latter on the site was changed. After consulting Bondo sub-district health officer where blood in urine was prevalent the identified Got Abiero sub-location in South Sakwa as the area. The site was changed later on due to the nature of the study which required local people's perception on blood in urine. Too much time was wasted when trying to locate the site since the researcher was from another province apart from Nyanza Province of Kenya.
2. Got Abiero is sparsely populated and the homesteads are scattered very far apart. It was time consuming trying to trace houses which were hidden by rocks, bushes and thick grass. A lot of time was wasted in this exercise. Sometimes it was very frustrating to go to a home and bounce after walking for a distance of about five kilometres or more, and also after climbing the steep hills. This was solved by placing an appointment before going to an area through the interpreter since he was from the same locality.
3. Poor communication means in South Sakwa as a whole, roads are not tarmacked and they are impassable during the rainy season.

In the are where the study was carried the matter is worse since there is only one seasonal road which divides the sub-location into two halves. The road passes at a place where there is a depression and when it rains, water swamps forms and hence no vehicles can pass in the region. It also becomes difficult for human beings to pass through the stagnant water in the region. The researcher and the

interpreter had to walk for a very long distances on foot.

4. Interruption from neighbours:- In the course of the interview in some cases there were undue interruptions from neighbours and visitors. Some were curious and wanted to know what the researcher was after. Incase where a respondent was selling some commodities such as sugar, match boxes, paraffin, the customers used to come and buy the items, it was time consuming since the respondent would sometimes go around looking for a change. This problem was solved by the researcher and the interpreter by speeding up the interview.

5. Language Barrier:-

The researcher was not conversant with the local language and therefore an interpreter was hired to solve the problem.

6. Devil Worship :- One respondent was very unwilling to answer any question and implicated the researcher and the interpreter with devil worshippers. He said that it is rampant in the country and in the region and people might pose as researchers when they were devil worshippers. To convince the person that the researcher permit from the president sand also the University identity card. After perusing through the document the person softened and he was ready to be interviewed.

CHAPTER FOUR

DATA ANALYSIS I

nong the four hypothesis was the one below which had the assumption the frequent contacts with water bodies promoted ; rate of infection by Schistosomiasis haematobium. In testing this hypothesis a number of variables were involved riables contact with water bodies, the influencing variables was measured by the following.

Whether there are water bodies near respondents house.

) Type of water bodies

) Distance of water bodies

) source of drinking water

) Boiling water

Knowing swimming

ie variable blood in urine was measured by: whether somebody has ever been blood in his/her urine?' Heard about it, or en somebody suffering from blood in urine. Contingency tables were derived by cross tabulating the dependent variables ih all the independent variables. Most of the chi-square values yielded by the cross tabulation attained significance grater an 0.01. The first variable whether there are water bodies nearby respondents house gained significance grater than 0.01 iere is tendancy to associate blood in urine with water bodies. Out of one hundred and fifty respondents 64% had seen ood in their urine 19% have never seen blood in their urine and 3 % had heard about blood in urine, 20(13.3) had seen mebody suffering from blood in their urine, Those who said they had seen somebody suffering from blood in urine said her their children had blood in their urine, their relatives etc.

enerally fifty four people of the one hundred and fifty have never been infected by blood in urine. The fact that from those no were infected 64% had seen blood in their urine, 3 % had heard about blood in urine and 135 had seen people with ood in their urine. This is a clear indication that blood in urine is prevalent in the are. Blood in urine is associated with ater bodies and it is indicated by the table cells ninety five of one hundred and fifty respondents interviewed had seen ood in their urine and they stay near water bodies. There were only two respondents who said there were no water bodies ound their homestead and one of them had seen blood in his//her urine and the other had heard about blood in urine. In Got biero sub-location both the young and the old come into contact with water for both economic and recreational purposes id due to intense human and water interaction accompanied by poor faecal and urine disposal

lethods their water remain contaminated with cercariae most of the year. From the table cells there is a clear indication

that blood in urine is a common problem in the area. The key informants also informed the researcher that primary school pupils were hard hit. The researcher also observed that in the study area the young aged had prolonged water contact, especially after school.

TABLE 4.1

4.1 BLOOD IN URINE BY WATER BODIES NEARBY

EVER SEEN BLOOD IN URINE	WATER BODIES NEARBY		
	YES 1	NO 2	ROW TOTAL
YES 1	95	1	96
	64.2	50.0	64 0
NO 2	29		29
	19 6		19.3
HEARD ABOUT IT 3	4	1	5
	2.7	50.0	3.3
SEEN SOMEBODY 4	20		20
	13.5		13.3
COLUMN	148	2	150
TOTAL	98.7	1.3	100

X^2 = 13.96748 DF = 3 P<0.01 CONTINGENCY COEFFICIENT .29186

The table indicates that there is a clear association between water bodies and blood in urine. The contingency coefficiency and chi-squire statistics indicate a very strong relationship

TABLE 4.2 **BLOOD IN URINE BY NAME OF WATER BODIES AROUND**

BLOOD IN URINE	POND 1	STREAMS 2	STREAMS/PONDS 3	ROW TOTAL
YES 1	13	5	78	96
	65.0	55.6	64.5	64.0
NO 2	2	2	24	29
	13.0	22.2		19.3
HEARD ABOUT 3	2		3	5
	10.0		2.5	3.3
SEEN SOMEBODY 4	2	2	16	20
	10.0	22.2	13.2	13.3
COLUMN TOTAL	20	9	121	150
	13.3	6.0	80.7	100.0

The table above indicates that both the ponds and the streams are good sources of blood in urine infection. The table indicates that those who live near the ponds thirteen of them have been affected which is 65 % of those who live near the ponds alone, 155 out of those who live near the ponds have not been affected while of those who live near the pond had heard about blood in urine, and 10% of those who live near the ponds have seen somebody suffering from blood in urine. 9 respondents live near the stream and they account for 16% of all l these people who were interviewed, five of them have been infected by schistosomiasis haematobium, which account for 56% of those who live near streams, 22% have never seen blood in their urine but they live near the streams, nobody lives near the stream and had heard about blood in urine, but 22% of those who live near the streams have seen somebody suffering from blood in the urine. Out of one hundred and fifty respondents one hundred and twenty one respondents which accounts for 81% live near both the ponds and the streams, 655 of them had seen blood in their urine, 25% had not seen blood in their urine and also lives near ponds/streams three respondents who lives near ponds and streams had heard about people with blood in their urine and 13% had seen somebody suffering from blood in urine. From the above one can conclude that since the majority of the affected live near ponds and streams, then the type of water near the respondents a source of infection. The researcher observed that most of the

water bodies in the area were surrounded by weeds especially along the ponds, the streams were also surrounded by weeds and thick bushes. The researcher also observed that the water bodies were either stagnant or slow moving. This supports (Musaus' 1977) study in Machakos which indicated that snails harbouring schistosomiasis cercariae prefer dams and streams with weeds and other vegetation on which they feed. The other factor favouring the prevalence of schistosomiasis in Got abiero is the nature of water which was stagnant and slow flowing, such water bodies offer a breeding ground for the snails because fast flowing water tends to sweep away the snails and their eggs. in the area blood in urine is a common problem no matter which bodies a person lives nearby.

TABLE 4.3 BLOOD IN URINE BY DISTANCE OF WATER BODIES FROM RESPONDENTS HOME

BLOOD IN URINE	DISTANCE OF WATER BODIES				
	<220M	<400M	ABOUT 800M	>800M	ROW TOTAL
	1	2	3	4	
YE 1	28	38	19	11	96
	60.9	71.7	65.5	50.0	64.0
NO 2	8	8	6	7	29
	17.4	15.1	20.7	31.8	19.3
HEARD	1	2	1	1	5
ABOUT 3	2.2	3.8	3.4	4.5	3.3
SEEN	9	5	3	3	20
SOME BODY 4	19.6	9.4	10.3	13.6	13.3
COLUMN	46	53	29	22	150
TOTAL	30.7	35.3	19.3	14.7	100.0

$X^2 = 6.08343$ DF = 9 P >0.01 CONTINGENCY COEFFICIENT = 0.19742

When highlighting this variable the researcher was of the opinion that the nearer one is to the water bodies the higher the chances of infection by schistosomiasis haematobium. By looking at the table cells, there is a clear indication that those who live near the water bodies are infected more by the schistosomiasis haematobium than those who live far away from water bodies. Those who live near bodies are likely to frequent water sites regularly than those who leave far way from

ater bodies. Two respondents whose houses were just next to the stream, pond testified that they have a bathing site at a idden place near the stream unfortunately both of them had seen blood in their urine more than once. From table 4.3 there a clear indication that the majority of the people who had seen blood in their urine lived near water bodies. For instance f the ninety six people who had seen blood in their urine sixty six of them lived <200m and <400m from the water bodies his is to say that majority of the infected by Schistosomiasis haematobium lived near water bodies. Out of one hundred nd fifty respondents who were interviewed 31% lived 31% lived <200m from the water bodies. 61% of those who live 200m had seen blood in their urine, eight people who accounts for 17% of those who live <200m from the water bodies ave never seen blood in their urine, one of those who live less than 200m from water bodies had heard about blood in urine nd 20% respondents of those who lived <200m from water bodies had seen somebody had seen somebody suffering from lood in urine. Fifty three respondents who accounts for 35% of the total respondents lived <400m from water bodies. 72% espondents who lived <400m had seen blood in their urine. 15% of those who lived <400m had not seen blood in their rine. 4% of those who lived <400 m had heard about blood in urine. 9% of those who lived <400m had seen somebody uffering from blood in urine.

Those who lived about 800m from the water bodies were 19% out of the total respondents interviewed. 65% of those who ived about 800m had seen blood in their urine 20% of those who lived about 800m from water bodies had heard about blood in urine. 10% of those who lived about 800m from water bodies had seen some blood in his/her urine.

Those who lived >800m were twenty two respondents and they accounted 15% of the total respondents. out of which 50% of them had seen blood in their urine. 32% of those who lived greater the 800 m from water bodies had not seen blood in heir urine. one out if those who lived >800 m from water bodies had heard about blood in urine. three out of those who ived greater than 800m from water bodies had heard about blood in urine. Given that Got Abiero is a semi-arid region there s a tendancy of many people sharing the same source of water especially during the dry season because water especially during the dry season is scarce in the region. From the high number which is infected 96% of the total respondents there is a clear indication that most of the water bodies in Got-Abiero sub-location are contaminated.

TABLE 4.4 **BLOOD IN URINE BY DRINKING WATER SOURCE**

BLOOD IN URINE	DRINKING WATER SOURCE		
	STREAM 1	POND 2	ROW TOTAL
YES 1	32	64	96
	62.7	64.6	64.0
NO 2	9	20	29
	17.6	20.2	19.3
HEARD ABOUT 3	3	2	5
	5.9	2.0	3.3
SEEN SOMEBODY 4	7	13	20
	13.7	13.1	13.3
COLUMN TOTAL	51	99	150
	34.0	66.0	100

X^2 = 1.64782 DF = 3 P>0.01 CONTINGENCY COEFFICIENT = 0.10424

After the chic-square statistics and contingency ceofficiency were calculated the result was that there was significant relationship between variables drinking water source and those who had seen blood in their urine. From the table cells there is a clear indication that whatever water is used for drinking it is a likely source of infection, by schistosomiasis haematobium, in the area since those who use the stream have been infected and also those who use the ponds. This is to say that blood in urine is a common problem in Got-Abiero.

Again from the table cells one can learn that majority of the people use the ponds water since ninety nine people who account for 66% of the total people interviewed use pond water while fifty one respondents which account for 34% of the total respondents use the stream water. From the table cells it seems the type of water used fro drinking determines the level of infection by Schistosomiasis haematobium. Out of fifty one respondents who use their drinking water from the stream 63% had seen blood in their urine, 185 of those who get drinking water from the stream have never seen blood in their urine. 6% of those who use water from the stream had heard about blood in urine, 145 of those who get their drinking water from the stream had seen somebody suffering from blood in urine.

ıose who use the pond water have been infected more by schistosomiasis haematobium than those who use stream water % out of those who use ponds water for domestic purpose had seen blood in their urine, 205 of those who use ponds water ve never seen blood in their urine, 2% of those who use pond water had heard about blood in urine and 135 of those who e ponds water had seen somebody with blood in his/her urine. From the following we can draw a conclusion that pond ıter which is used by many people is a major source of infection with schistosomiasis haematobium. This is so because ıny people tend to prefer to go and fetch water at the ponds, washing clothes and watering animals. Some of the respond- ts said " We preferred using ponds water for domestic purpose said ponds' water as compered to stream." Again for the ɔmen respondents, some said that water sites, especially where there are ponds, act as good meeting places for friends and ey can go to fetch water in a big group without scooping soil as it happens to those who use stream water for domestic ırpose, men also met near the ponds especially when they are watering animals.

espite the fact that those respondents who use the ponds water have shown that a higher number of people who had seen ood in their wine it does not mean that the stream is not contaminated. In conclusion one can say that generally the water ɔdies in Got-Abiero are contaminated by schistosomiasis haematobium worms.

TABLE 4.5 **BLOOD IN URINE BY WHETHER RESPONDENTS KNOWS HOW TO SWIM**

EVER SEEN BLOOD	KNOW HOW TO SWIM		
IN URINE	YES 1	NO 2	ROW TOTAL
YES 1	53	43	96
	67.9	59.7	64.0
NO 2	15	43	96
	19.5	19.4	19.3
HEAD ABOUT 3	1	4	5
	1.3	5.6	3.3
SEEN SOMEBODY 4	9	11	20
	11.5	15.3	13.3
COLUMN TOTAL	78	72	150
	52.2	48.0	100

χ^2 = 2.84069 DF = 3 P>0.01 CONTINGENCY COEFFICIENT = 0.13633

When the above variable whether one knows how to swim cross tabulated with blood in urine the chi-square statistics showed significance at 0.01 and the contingency coefficient showed some relationship. From the table there is a very clear indication that the respondents who swim and those who don't swim have ever seen blood in their urine, although the level tends to go up for those who swim than those who swim than for those don't know how to swim. For instance fifty three of those who swim had seen blood in their urine, 19% of those who had not seen blood in their urine knows how to swim and one of those who had heard about blood in urine knows how to swim and 12% of those who had seen somebody suffering from blood in urine knows how to swim. Forty three out of those who don't know how to swim had seen blood in their urine, 195 of those who had not seen blood in their urine do not know how to swim, 6% of those who had heard about blood in urine don't know how to swim and 15% of those who had been somebody suffering from blood in urine don't know how to swim. Therefore there is a difference in infection between those who swim and those who don't know how to swim. From the table one can draw a conclusion that those people who go for swimming are more likely to be infected by schistosomiasis than those who don't.

In swimming the individual exposes his whole body to contaminated water and this increases the chance of infection.

In swimming an individual takes a lot of time in the water and this also increases the chance of infection.

Another aspect which the researcher assumed that it is related to schistosomiasis infection is boiling water. When it was cross-categorised with blood in the urine the results were insignificant. The level did not attain significance at the 0.01. This indicates that boiling drinking water alone is not enough to prevent schistosomiasis infection. Although from the table cells one can say to some extent boiling water is related to blood in urine. One hundred and five respondents who account for 71% of the total population interviewed boil their water domestic water, and 59% of those who boil water had seen blood in urine, 22% of those who had not seen blood in their urine boil water, 3% of those who had heard about blood in urine boil water and 16% of those who had seen somebody suffering from blood in urine boil water. 30% respondents out of all those who were interviewed don't boil water. AS great majority of those who do not boil water had seen blood in their urine which accounts for 76% of those who do not boil water and 13 5 of those who boil their water had not seen blood in their urine, 4% of those who had heard about blood in urine don't boil their water.and 7% of those who had seen somebody suffering from blood in urine don't boil their domestic water. Therefore we can conclude that there is a very weak relationship between blood in urine and boiling water because from the table there is a clear indication that twenty nine respondents out of one hundred and fifty respondents who were interviewed had not seen blood in their urine and twenty three respondents of those who had not seen blood in their urine boil water.

The results given by Chi-square statistic gives a clear evidence that schistosomiasis haemotabium infection is complicated for rural Kenyans haematobium infection is complicated for rural Kenya to understand. This is because it is not only the water which goes to digestive systems which is only hazardous but also if the skin comes into contact with any contaminated water one gets schistosomiasis haematobium infection. It is the researcher's view that the local people's occupation and social environment helps to determine the incidence and prognosis of diseases. This goes hand in hand with Osoro's (1990) argument that many diseases are not natural calamities that strike in a haphazard way but are injuries inflicted on people by the nature of their daily activities and their customary modes of life

TABLE 4.6 **BLOOD IN URINE BY BOILING DOMESTIC WATER**

EVER SEEN BLOOD IN URINE	BOILING WATER		
	YES 1	NO 2	ROW TOTAL
YES 1	62	34	96
	59.0	75.6	64.0
NO 2	23	6	29
	21.9	13.3	19.3
HEARD ABOUT 3	3	2	5
	2.9	4.4	3.3
SEEN SOMEBODY 4	17	3	20
	16.2	6.7	13.3
COLUMN	105	45	150
	70.5	29.5	100

$X^2 = 4.91927$ DF =3 P<0.01 CONTINGENCY COEFFICIENT = 0.17820

In rural Kenya Social activities and economic activities bring people into contact with infected water people come into contact with contaminated streams, ponds water through swimming, washing clothes, watering animals, fording, playing, drawing water. Christian baptism there are some Christian churches which believe that one become a full member of their church which he/she is dipped in water. Schistosomiasis cercarica will keep on penetrating the human body as long as the

person remains in contact with the water. The greater the body surface exposed to the infected water the greater the chances of severe infection. Observations indicated that most people of Got-Abiero indicated that most people of Got-Abiero go to the ponds and streams in the afternoon to swim, wash clothes and water animals. According to Masau (1977 katsivo, muthamia, karan (1991) the snail shed huge number of infections larvae at ten when a warmer weather starts. This means in the afternoon the infections cercariae is plenty in the water bodies. This means that those people who come into contact with water in the afternoon should have a higher prevalence of infection with Schistosomiasis haematobium than those who come into contact with water i.e the morning section and late evening section. Majority of the people fear cold water and therefore in the afternoon that is when they tend to go and swim and wash clothes etc. When the water is warm and that is when the cecariae output is highest. Again due to the nature of rural activities which do not allow them to clean before going to cultivate in the shambas researcher also observed that in the afternoon most men were bathing at the water bodies after their respective laborious duties they ended up taking bath on their way home. In the afternoon section the researchers observed that along the water bodies women were busy washing clothes and washing young children. Some respondents said they preferred washing clothes along the water bodies because there is more space for drying clothes and are less crowded thus giving them some ground fro gossips. It is therefore unfortunate that in these study area the young and the old, male and female showed a lot of water interaction during the hotter or warmest period of the day when the risk of infection is highest, and this is so because of ignorance. People cannot associate various diseases with water they are forced to rely on the same water supplies since they have no alternative water sources.

Farooq (1966) established that the building materials used also contribute to the spread of Schistosomiasis infection in Egypt' eg. person involved in the constructing mud and bricks houses had higher prevalence of Schistosomiasis infection. An explanation of this is that bricks and mud for building houses are made with the help of water from the streams and ponds which is contaminated and this exposed the contractors to the danger of schistosomiasis haematobium cercariae. Hence they get infected. This can also apply in Got-Abiero sub-location, because a cross-examination of the area indicated that all the houses had mud walls and grass thatched. Stone houses were very few. This is a clear indication that houses construction must come into contact with alot of water and hence increase their chances of getting Schistosomiasis haematobium infection. The above evidence indicates that the hypothesis which states that there is a relationship between Schistosomiasis infection and contact with bodies in Bondo Division has been supported.

SCHISTOSOMIASIS HAEMATOBIUM IS ASSOCIATED WITH GENDER BASED KINSHIP ROLES:

The above hypothesis had the assumption that gender based kinship roles make someone prone to schistosomiasis infection. In testing the above hypothesis a number of variables were involved. variables gender based kinship roles was measured by

the following:

(a) Variable sex

(b) Diseases affecting more males than females

(c) Whether males and females engage in fishing

(d) Who makes fishing

(e) Sources of fishing traps' materials

(f) Domestic water roles

Variables schistosomiasis which was the dependant variable was cross-tabulated with each above. According to the findings there is a tendancy to associate blood in urine with males than females. As indicated in the table below, out of seventy five males who were interviewed fifty nine of them had seen blood in their urine and only eight of them had no heard about it, neither had they seen somebody suffering from blood in his/her urine.

Only thirty seven women out of seventy five women who were interviewed had seen blood in their urine. All those who had seen blood in their. All those who had seen blood in their urine at one time or another were ninety six which accounted for 64% of all those who were interviewed. This is a clear indication that blood in urine is a common problem in the area.

Blood in urine by sex.

TABLE 4.7BLOOD IN URINE

SEX	YES	NO	HEARD ABOUT	SEEN SOMEBODY	ROW TOTAL
MALE	59	8	1	7	
	78.7	10.7	1.3	9.3	75
	61.5	27.6	20.0	35.0	50.0
FEMALE	37	21	4	13	75
	49.3	28.0	5.3	17.3	50.0
	38.5	72.4	80.0	65.0	
COLUMN TOTAL	96	29	5	20	150
	64.0	19.3	3.3	13.3	100

X^2 = 14.46925 DF = 3 CONTINGENCY COEFFICIENT 0.29661 P>0.01

X^2 from the above table is significant and this is indicated by a contingency coefficient of .29661

Blood in urine was also cross-tabulated with the disease which affects morer males than females. Out of one hundred and fifty respondents 60% said that urinary Bilharzia, affect morer men than women out of ninety respondents who said urinary Bilharzia affects morer males than females 61% of those who had blood in urine said urinary bilharzia affects morer males than females. 16% of those who had never seen blood in urine said urinary Bilharzia affects morer than women. 2% of those who had heard about blood in urine said urinary bilharzia affects morer males than females. 13% those who had seen somebody with blood in urine said urinary bilharzia affects morer males than females fourteen respondents out of one hundred and fifty respondents said. Back-ache affects morer men than women, two respondents said back-ache affects morer males than females, six respondents said headache and malaria affects morer males than females, four respondents said blocked bladder affects morer males than females, nine respondents said sexually transmitted diseases affects morer males than females. One person said he doesn't know any disease which affects more males than females. Twenty four respondents said that there are no diseases that effects more males than females so their answer was not applicable.

TABLE 4.8 BLOOD IN URINE BY DISEASE AFFECTING MALES THAN FEMALES

Blood in Urine	Bilharzia	Back-ache	Back-ache & Bilharzia	Head ache Malaria
YES 1	61 67.8	9 64.3	2 100.0	5 83.3
NO 2	15 16.7	2 14.3		
Heard about 3	2 2.2	1 7.1		
Seen Somebody 4	12 13.3	2 14.3		1 16.7
Column Total 5	90 60.0	14 9.3	2 1.3	6 4.0

Blocked bladder	STD	Don't know	N/A	Row Total
3	5	1	10	96
75.0	55.4	100.1	41.7	64.0
	4		7	29
	44.4		29.2	19.3
1			2	5
25.0			8.3	3.3
			5	20
			20.8	13.3
4	9	1	24	150
2.7	6.0	0.7	16	100

he association between variables gains significance at 0.01 and also the contingency coefficient indicates strong relation-ıip. A good explanation for this is that males interact with water at various occasions; eg. When swimming, fishing, ıatering animals, cultivating along the flood plains and when constructing mud houses. The researcher observed that in ıost all the cases observed where people were swimming males were involved, especially young boys immediately after :hool, they were also observed playing with water while trying to get some fish and monitor lizards. Watering animals also ıne by men and a few women. The researcher observed that in the area almost all the houses there had mud walls and the ork is reserved for men. Therefore in the process of making mud men come into contact with contaminated water, this ɔes in the same line with Farooq et al (1966) argument when he stated that the materials used for constructing houses redisposes the builders to schistosomiasis infection. in the study, it was also the investigator's assumption that those people ho engage in fishing are the ones who are prone to blood in urine. The researcher was of the opinion that men are the only nes who engaged in fishing but after the analysis the researcher was proved wrong. Out of one hundred and fifty respond-nts 75% said that women do not engage in fishing and blood in urine based on gender roles. According to the answer given y some respondents women engage in fishing along the stream while men do their fishing along the shore of lake Victoria. ılthough few respondents said that fishing is a male's activity a lot of the respondents said there is nothing cones wrong ıith women going to fish. The only difference comes in where some goes to fish because as some of the respondents argued ıomen are not strong enough to go fishing along the lake shores

ABLE 4.9 BLOOD IN URINE BY MALE AND FEMALE FISHING

EVER SEEN BLOOD IN URINE	MALE/FEMALE	FEMALE DON'T	ROW TOTAL
YES 1	75	21	96
	66.4	5.8	64.0
NO 2	19	10	29
	'16.8	27.0	19.3
HEARD ABOUT 3	4	1	5
	3.5	2.7	3.3
SEEN SOMEBODY 4	15	5	20
	13.3	13.5	13.3
COLUMN TOTAL	113	37	150
	75.5	24.7	100

X^2 = 1.96618 DF=3 P<0.01 CONTINGENCY COEFFICIENCE = 0.11375

In tying to cross-tabulate various respondents ever seen blood in urine and those who make fishing traps the researchers had the assumption that those who make traps may be prone to schistosomiasis haemotobium than those who do not make them. Out of one hundred and fifty respondents eighty seven of those who had blood in urine said men are the only ones who make traps, 35 of those who had heard about blood in urine said that men are the ones who makes fishing traps. Out of one hundred and fifty respondents only 7% said that fishing traps are made by both males and female 18% of those who had not seen blood in their urine said that fishing traps are made by both male and female. There were no respondents who had heard about blood in urine and gave a response that men/women make fishing traps. Only one person who had seen somebody suffering from blood in urine said that fishing traps are made by male and female. One person who had seen blood in his/her urine did not know who make fishing g traps. Of those who had not been infected by blood in urine no one said that he/she doesn't know who make fishing traps. One out of those who had heard about somebody suffering from blood in urine said that he/she does not know who make fishing traps and again only one person who had seen somebody suffering from blood in urine who did not know who make fishing traps.

After analysis the Chi-square indicated that there was significance.

This could be attributed to the materials which make the traps. The investigater was of the opinion that the materials used for making traps consists of reeds. But according to the response given the materials used were twigs and other plants.

From the table below there is a clear indication that there is significance between blood in urine and those who make fishing traps.

TABLE 4.10 BLOOD IN URINE BY MAKING FISHING TRAPS.

-	MAKERS OF TRAPS			
BLOOD IN URINE	MEN 1	MEN/WOMEN 2	DON'T KNOW 3	ROW TOTAL
YES	87	8	1	96
	64.0	72.7	33.3	640
NO	27	2		29
	19.9	18.2	19.3	
HEARD ABOUT	4		1	5
	2.9		33.3	3.3
SEEN	18	1	1	20
SOMEBODY	1.2	9.1	33.3	13.3
	136	11	3	150
COLUMN TOTAL	90.7	7.3	2.0	100

$X^2 = 10.75717$ DF =6 P> 0.01 CONTINGENT COEFFICIENT = 0.25868

The findings revealed that men are the majority who had seen blood in their urine, and since from the table there is a clear indication that they are the ones who make traps, one can be forced to say that they also get material for making traps along the streams and ponds and in the process get infected by schistosomiasis haematobium worms.

The investigator observed that business tended to be found near the water bodies since the area is very dry.

Blood in urine was cross-tabulated with sources of trap materials. In highlighting the above variables the researcher had the assumption that the materials used for making fish traps are mostly available near water bodies. The variable gained significance at 0.01. This is because most of the respondent indicated that they are gotten from the bushes. The investigator observed that some of the trees used for making traps are mostly available near water bodies. The variables gained significance at 0.01. This is because most of the respondents indicated that they are gotten from the bushes. The investigator observed that some of the trees used for making traps usually grow along the streams and ponds since its near water bodies where bushes trended to be concentrated most.

Table 4.11 indicated that out of one hundred and fifty respondents 63% said that fishing trap materials are usually taken from the bushes. 10% stated that they are usually cut along the ponds, three respondents were not sure where fishing trap materials come from, and nineteen respondent stated that trap materials are bought from the market places. The table below indicates that there is a good relationship between blood in urine and sources of fishing traps materials. The Chi-square statistic indicated a strong relationship and also the contingency coefficient of .342181 is quite strong.

TABLE 4.11 SOURCES OF MATERIALS

BLOOD IN URINE	BUSHES 1	ALONG THE STREAMS 2	ALONG THE PONDS 3	MARKET 4	NOT SURE 5	ROW TOTAL
YES 1	65	9	12	9	1	96
	69.1	60.0	63.2	47.4	33.3	64 0
NO 2	13	4	5	6	1	29
	13.8	26.7	26.3	31.6	33.3	19.3
HEARD ABOUT	4				1	5
	4.3				33.3	3.3
SEEN 4 SOMEBODY	12	2	2	4		20
	12.8	13.3	10.5	12.7		13.3
COLUMN TOTAL	94	15	19	19	3	3
	62.7	10.0	12.7	12.7	2.0	2.0

X^2 = 17.32828 DF = 12 P>0.01 CONTINGENCY COEFFICIENT = 0.32181

Such materials are found near contaminated water bodies hence the rate of infection among men increases. The researchers observed that bushes were concentrated along the water sites.

Table 4.12 indicates that the role of fetching water is mainly preserved for women and children. Men only assist in fetching water when there is a donkey. The investigator observed several occasions when men were fetching water by the help of donkeys. Since women come into contact with daily this answer why more than a half of those women who were interviewed had seen blood in urine. There is a clear indication that men had seen blood in their urine than females probably because women fetched water very early in the morning and later in the afternoon when the sun is usually not very hot. Men prefer swimming and bathing when it is very hot; and according to Musau (1977) this is when the snails release a lot of cerceriae in the water therefore men stand a high chance of infection than women.

TABLE 4.12 DOMESTIC WATER BOILS

Blood in Urine	Respondent	Spouse	Respondent Children	Respondent Parent	In-Law	Children	Spouse/Children	Sympathisors	Household Girl
YES	13 13.5 38.2	35 36.5 76.1	18 18.8 72.0	4 4.2 57.1	4 4.2 50.0	12 12.5 80.0	7 7.3 58.3	1 1.0 100.0	2 2.1 100
NO	13 44.8 38.2	5 17.2 10.9	2 6.9 8.0	3 10.3 49.2	3 10.3 37.5	1 3.4 6.7	2 6.9 16.7		
Heard about it	2 40.0 5.9	1 20.0 2.2	1 20.0 4.0			1 20.0 6.7			
Seen Somebody Suffering	6 30.0 17.6	5 25.0 10.9	4 20.0 16.0		1 5.0 12.5	1 5.0 6.7	3 15.0 25.0		
Column Total	34 22.7	46 30.7	25 16.7	7 4.7	8 5.3	15 10.0	12 8.0	1 7	2 1.3

The role of washing clothes is culturaly reserved for women and children. The researcher findings revealed that women and children are the ones who was clothes. In the case of single men they wash their clothes or at times they are assisted by parents or young brothers and sisters. Due to economic hardships in the area only two respondents had hired workers to assist in fetching water and washing clothes. The two workers surprisingly were girls thus supports further that domestic water tasks and washing clothes are considered to be female duties. These roles expose females to contaminated water and this explains why some more than half of the females who were interviewed had seen blood in their urine. It was observed that women spend a lot of time washing clothes along the water bodies. Again was sites acted as good areas for women because many of them would meet there while waiting for their clothes to dry they would gossip a lot. Others benefited from such areas because they come to learn about new knitting patterns.

Role of feeding cattle also seemed too to expose individuals to contaminated water. In the study area in almost every home there were cattle and sheep, only 6% of all those who were interviewed indicated that they had no livestock. The findings revealed that role of looking after livestock is mostly done by males although there are some females who stated that they do it themselves. To stress further that feeding livestock is a male's duty two respondents indicated that they had employed herdsboys. The investigator observed that since the terrain of the study are was characterised with hills and big rocks, animals were usually grazed along the sides of water bodies.

The water bodies are situated in flat areas and that this is where one finds green pastures, again animals are watered in this water bodies everyday. It was observed that the herdsmen spend a lot of time forcing young calves to take water and at times they would enter inside the water bodies. This gives a good answer why more males had seen blood in their urine than females in the study area.

In conclusion one would say that general interaction with water which is caused by gender based kinship roles, predisposes individuals to Schistosomiasis haematobium infection. Therefore gender based activities such as fetching water, washing clothes, watering animals, fishing, making traps (constructing mud houses) all expose individuals to contaminated water. Therefore the second hypothesis was accepted since there was enough evidence that gender based kinship roles expose individuals to Schistosomiasis haematobium infection.

CHAPTER FIVE

DATA ANALYSIS II

Schistosomiasis haematobium is associated with sanitary conditions of the local community. In testing this hypothesis a number of ariables were involved such as;

(a) Whether respondents uses a latrine

(b) Whether there is a latrine

(c) Duration of latrine

(d) House-latrine distance

(e) Where do you urinate?

(f) Whether young kids share latrine with elders

The above variables were cross-tabulated with variables ever seen blood in urine. Ever seen blood in urine was cross-tabulated with use off latrine.

1 WHETHER RESPONDENTS USE A LATRINE

After the analysis the results indicated that there was significant relationship between blood in urine and those who use latrine from the table there is a clear indication that there is a big difference between the respondents who use latrine and the ones who don't. Out of one hundred and fifty respondents 45% defecated in the latrines, while 55% defecate in the bushes, and near water bodies forty two respondents who had seen blood in urine said that they defecate in the latrine. 19% of those who had not seen blood in urine said that the defecate in latrines, 4% of those who had heard about blood in urine said that they use latrines and 15% of those who had seen somebody with blood in urine said that they also use latrines. Out of ninety six respondents who had seen blood in their urine 66 % gave resposes that they defecate in the bushes. 20% of those who had never seen blood in their urine said that they defecate in the bushes, 2% of those who had heard about blood in urine said that they defecate in the bushes and 12 % of these who had seen somebody having blood in urine said that they also defecate in the bushes. From the frequency cell there is a clear indicaton that those who do not defecate in the latrines were infected by Schistosomiasis haematobium more than defecates in the latrines.

TABLE 5.1 **BLOOD IN URINE BY THOSE WHO DEFECATE IN THE LATRINE**

EVER SEEN BLOOD IN URINE	YES 1	NO 2	ROW TOTAL
YES 1	42	54	96
	61.8	65.9	64.0
NO 2	13	16	29
	19.1	19.45	19.3
HEARD ABOUT3	3	2	5
	4.4	2.4	3.3
SEEN SOMEBODY4	10	10	20
	14.7	12.2	13.3
COLUMN TOTAL	68	82	150

DF = 0.70986 DF=0.01 CONTINGENCY COEFFICIENT = 0.06863

Chi-square statistic indicated that there was significance. The contingency coefficient indicated that there was some relationship between those who defecate in the bushes and schistosomiasis infection.

Out of one hundred and fifty respondents 47% said they had latrines in their homes. 53% said they had no latrines at their homes. Forty three of those who had blood in their urine said that they had a latrine in their homesteads 20% of these who had not seen blood in their urine said that they had latrines and 4% of those who had heard about blood in urine said they also had a latrine in their hones, ten respondents who had seen somebody with blood in urine said they had a latrine. Fifty three out of those who had seen blood in their urine said they didn't have a latrine at their home, 19% of those who had not seen blood in their urine had no latrine in their urine had no latrine in their home. two of those had heard about somebody with blood in urine said they had no latrine at their home and 13% of those who had seen somebody with blood in urine said that they had no latrine at their home.

From the frequency cells one can tell that more than half of the respondents didn't have latrines. When asked why they didn't have latrines they gave different responses which were not fully convincing to the researcher. Some respondents gave responses that they did not have money to construct a latrine, others said that there were so many bushes in the area, therefore there was no difference between using a latrine and bushes. This was a clear indication that to the local community in the area hygienic standards are very low. The researcher observed that excreta was not un-common along the foot paths and near water bodies. Some of the respondents said that their latrine got filled up and they had no plans of digging

mother one. In connection with throwing human waste anywhere the community in Got-Abiero are never left out when there are outbreaks of diseases such as chorela, water borne diseases and hook worms are very common. Key informants informed the researcher that there was an outbreak of Cholera three weeks before the research had commenced. The area's chief who was one of the informants informed the investigator that he has tried to force people to construct latrines built with no much success.

TABLE 5.2 **BLOOD IN URINARY BY LATRINE AT RESPONDENTS HOME.**

	LATRINE RESPONDENT HOME		
EVER SEEN BLOOD IN URINE	YES 1	NO 2	ROW TOTAL
YES 1	42 61.8	54 65.9	96 64.0
NO 2	13 19.1	16 19.5	29 19.3
HEARD ABOUT 3	3 4.4	2 2.4	5 3.3
SEEN SOMEBODY 4	10 14.7	10 12.2	20 13.3
COLUMN TOTAL	68	82	150

X2 = 0.70986 DF= 3 P>0.01 CONTINGENCY COEFFICIENT = 0.06863

2. **DURATION OF LATRINE BY BLOOD IN URINE**

This variable gained a significance relationship greater than 0.01. Out of seventy respondents who had seen blood in their urine and had their latrine constructed six years ago, forty three of those who had not been infected by blood in urine had a latrine constructed six years ago and one heard about blood in urine and had constructed latrine six years ago, three of those respondents who had seen somebody suffering from blood in urine had constructed their latrine six years ago. Seven respondents who had been infected by Schistosomiasis haematobium had their latrine constructed their latrines six years ago. Seven respondents who had been infected by Schistosomiasis haematobium had their latrines constructed between three and six years. One respondent who had seen blood in his/her urine had his/her latrine constructed between three and six years. No one had heard about blood in urine and had his/her latrine constructed between three and six years ago. One out of those who had heard about blood in urine had his/her latrine constructed between three and six years. In total nine respondents of those who had a latrine had it constructed between three and six years ago. Of the seventy respondents who

ad a latrine twelve of them had constructed their latrine one and three year's ago. 14% respondents of those who had heard bout blood in urine had constructed their latrine one and three years ago, 18% respondents who had seen somebody uffering from blood in urine had their latrine constructed between one and three ago. Twenty two respondents out of eventy respondents who had latrines between one and three years. Out of seventy respondents who had seen blood in their rine had their latrines constructed one year ago before the research was started five out of those who had not seen blood n their urine had constructed their latrines one year ago, 3% of those who had heard about blood in their urine had one year id latrines, three out of those who had seen somebody suffering from blood in their urine had one year old latrines. herefore twenty two respondents of those who had latrines had them constructed about one year ago before the research ork. According to the table, the majority of those who had been affected and had latrines lies in those who had their latrine nstructed one year ago before the research and also between one and three years. This indicates that to some extent chistosomiasis is related to the duration of the latrine because for those infected and had no latrines according to analysis ey were highly infected than those who had a latrine. Those who had constructed their latrine one year ago also showed higher level of infection because it seemed in the better part of their lives they were defecating and urinating anywhere and is exposed them to Schistosomiasis infection than those who had constructed their latrine three to six years ago

ABLE 5.3 **BLOOD IN URINE BY DURATION OF LATRINE**

EVER SEEN BLOOD IN URINE	DURATION OF LATRINE					
	6 YEARS	3.6 YEARS	1-3 YEARS	<1 YEARS	N/A	ROW TOTAL
	1	2	3	4		5
YES 1	11	7	12	14	52	96
	61.1	77.8	54.5	63.6	65.8	64.0
NO 2	4	1	3	5	16	29
	22.2	11.1	13.6	22.7	20.3	19.3
HEARD ABOUT 3		3	2	5		
		13.6		2.5	3.3	
SEEN SOMEBODY 4	3	1	4	3	9	20
	16.7	11.1	18.2	13.6	11.9	13.3
COLUMN TOTAL	18	9	22	22	79	150
	12.0	60	14.7	14.7	52.7	100

X2 = 11.15419 DF=12 P>0.01 CONTINGENCY COEFFICIENT = 0.26309

Table 5.4 indicates that there is relationship between blood in urine and place of urination. Out of one hundred and fifty respondents only 9% urinate even those who had latrines most of them urinate anywhere in the bushes and near water bodies. Nine respondents of those who had seen blood in their urine urinates in the latrine. No one out of the five respondents who had heard about blood in urine urinates in the latrine one out of those who had seen somebody suffering from blood in urine urinate in the latrine.

BLOOD IN URINE BY PLACE OF URINATION

TABLE 5.4

EVER SEEN BLOOD IN URINE	WHERE ONE URINATES		
	LATRINES	FILED	ROW TOTAL
	1	2	
YES 1	9	87	96
	64.3	64.0	64.0
NO 2	4	25	29
	28.6	18.4	19.3
HEARD ABOUT 3		5	5
		3.7	3.3
SEEN SOME BODY 4	1	19	20
	7.1	14.0	100.0
COLUMN TOTAL	14	136	150
	9.3	90.7	100

X = 1.64032 DF = 3 P> 0.01 CONTINGENCY COEFFICIENT = 0.10401

From the table there is a clear indication that 91% urinates anywhere and that 64% of those who urinate anywhere had seen blood in their urine. This explain why in the study are blood in urine is a common health problem. Poor disposal of excreta facilitates the rate of environmental pollution in this case water bodies become sources of infection.

There is also a clear indication that even those respondents who have latrines in their homesteads rarely make use of them, as shown by the small number of respondents who stated that they urinate in the latrine. The researcher observed that water bodies are shared communally and if they are contaminated even those people who urinate in the latrine will be infected.

Another variable which was cross tabulated with blood in urine young people sharing the same latrine with the elders

When highlighting the variables the investigator had the assumption that in the study area young people culturally do not share latrines with the elders, and maybe would act as good agents of transmitting schistosomiasis haematobium. The results admitted that they share latrines with their children.

This variable did not attain significance at 0.01 level. The contingency coefficient indicated a very low significance at 0.19182 which is very low. Out of one hundred and fifty respondents thirty four of those who had blood in urine said they share latrines with. Young kids. 16% of those who had never seen blood in their urine said they share latrine with young kids, one of those who had heard about blood in urine said that he/she share latrines with young ones and 16% of those who had seen somebody suffering from blood in urine said they share latrines with young ones. Out of the eighteen respondents who said they don't share latrine with young ones nine of them had seen blood in their urine. 28% of those who have not been affected by Schistosomiasis haemotobium said they cannot share a latrine with the young ones, 11% out of those who had heard about it said they don't share a latrine with the young ones. 11% out of those who had seen somebody said they don't share latrine with young ones. The result indicated that there was no relationship between those who share latrines with young ones or not with blood in urine.

TABLE 5.5

BLOOD IN URINE BY YOUNG OR OLDER SHARING SAME LATRINE

EVER SEEN BLOOD IN URINE	YOUNG AND ELDERS SHARING SAME LATRINES			
	YES 1	NO 2	N/A3	ROW TOTAL
YES 1	34	9	53	96
	66.7	50.0	65.4	64.0
NO 1	8	5	16	29
	15.7	27.8	19.8	19.3
HEARD ABOUT 3	1	2	2	5
	2.0	11.1	2.5	3.3
SEEN SOMEBODY 4	8	2	10	20
	15.7	11.1	12.3	13.3
COLUMN TOTAL	51	18	81	150
	34.0	12.0	54.0	100

X^2 = 5.73011 DF =6 P>0.01 CONTINGENCY COEFFICIENT = 0.19182

3. BLOOD IN URINE BY THE DISTANCE OF LATRINE FROM RESPONDENTS HOUSE

Variable distance of latrine from respondents have failed to gain significance at 0.01. This shows that there is no relationship between the distance of the latrine from the respondents house with blood in urine. The researcher had the assumption that those respondents whose latrines are near their houses may be less affected by Schistosomiasis haematobium than those whose latrines are 50m from their houses. This researcher had such an assumptions taking into consideration that most people in the area where the study was carried don't mind urinating and defecating anywhere in the field therefore if a latrine is constructed very far from the houses there is a tendancy of the people preferring to defecate in the bushes at night. According to some respondents they use latrines during the day and at night they go to bushes. The result of the analysis shows a different picture because for those whose latrines are near the houses results indicate they have been affected more than those whose latrines are 75m from their houses. Out of seventy respondents who had latrines in their homes nineteen had their latrines ten metres away from their houses and had seen blood in their urine. 19% of those who had not seen blood in their urine had their latrine 10m from their house. there was nobody who had heard about blood in urine and had his/her houses 8% of those who had seen somebody suffering from schistosomiasis haematobium had their latrine 10 metres from their house. Fifteen respondents out of the seventy respondents who had latrines, had seen blood in their urine and had their latrines at 20m from their houses. Four respondents who had not seen blood in their urine had their latrines 20m from their houses, one of those who had heard about blood in urine had his/her latrine 20m from the respondents house. Nine respondents of those who had seen blood in their urine had a latrine 50m from their houses, 11% of those who had their latrine 50m from their houses. 17% out of those who had seen somebody suffering from blood in urine had latrines at 50m from their houses. In conclusion, blood in urine has no relation with the distance of the latrine although from the table there is a funny picture reflected from the frequency cells that the nearer one is to the latrine the higher the rate of infection.

56 BLOOD IN URINE BY DISTANCE OF LATRINE FROM THE HOUSE

	DISTANCE FROM HOUSE TO LATRINE				
EVER SEEN BLOOD IN URINE	10M 1	20M 2	>50M 3	N/A 4	ROW TOTAL
YES 1	19 73.1	15 57.7	9 50.0	53 66.0	96 64.0
NO 2	5 19.2	4 15.4	4 22.2	16 20.0	29 19.3
HEARD ABOUT 3		1 3.8	2 11.1	2 2.5	5 13.3
SEEN SOMEBODY 4	2 7.7	6 23.1	3 16.7	9 11.3	20 13.3
COLUMN TOTAL	26 17.3	26 17.3	18 12.0	80 53.3	150 100

$X^2 = 8.61953$ DF=9 P<0.01 CONTINGENCY COEFFICIENT = 0.23311

In conclusion hypothesis III which stated that there was an association between schistosomiasis haematobium and sanitary conditions in Bondo Division was accepted. This is so because majority of the people studied in Got Abiero never had latrines, and they defecate anywhere in the bushes and other hidden places because they have been socialized that defecating anywhere and urinating anywhere is not bad. The area's chief who was one of the key informants informed the researcher that many efforts have been made to persuade local community to construct latrines but they are adamant. According to the other key informants the people of Got Abiero see nothing wrong with defecating and urinating anywhere that is along the bushes, streams and ponds, after all the starving rural dogs and hens feed on the stool. After the stool is eaten the matter is closed as far as the rural people are concerned. They fail to connect the fact that animals drink water at the same ponds and streams and by doing so drop stool particles hanging on their whiskers into the water. By any chance if that stool had Schistosomiasis eggs from the last drops of the urine they will immediately begin the life cycle again on the water and re-infect man once again. Parenthetically this factor shows the urgency of health education required by the rural population to reduce the incidence of this disease and other water-borne diseases in the are. Most communities had not had a chance to learn about the germ causation of disease and to realize the need to stop diseases related to poor disposal of

human waste through the use of latrines. Communities that have a habit of using open fields for defecation and urination resist change and this applies to residents of Got-Abiero. The availability of space (open fields) in rural areas for defecation and urination makes the rural community to resist change, again the nature of villagers work, place of work particularly males and children are usually in the field (Farming and herding) this encourages open field excrete disposal. In rural areas of Kenya and elsewhere the prevalence of diseases caused by unsanitary conditions can only be reduced if and when communities have adequate water supplies and adequate safe methods of disposing human wastes. The only permanent solution in eradicating diseases caused by water pollution in both rural and urban areas is by educating people to change their habits. For instance if the local community cannot be forced to dig latrines since they consider latrines as alien phenomena than they can be persuaded to defecate and to urinate far away from water bodies. To prevent schistosomiasis cooperate with programs to kill snails, the infected should be treated, but most important everyone should learn to urinate in latrines and never urinate in or near water bodies

4 **THERE IS A CLOSE RELATIONSHIP BETWEEN SCHISTOSOMIASIS INFECTION AND THE FOLK ETIOLOGICAL NOTIONS OF THE LOCAL COMMUNITY OF BONDO DIVISION.**

When highlighting the above hypothesis the researcher had the assumption that Etiological notions of the local community of Bondo Division, could have a close relationship on schistosomiasis infection. It was important to investigate the Got Abiero's community on what caused blood in urine, since if one knows the cause of a disease he/she always try to avoid the cause. The above variables was measured using the following indicators.

(a) What blood in urine was associated with

(b) Whether there was a local name

(c) Which type of environment blood in urine could be found

(d) Time of the year when blood in urine is rampant

(e) Inquiring on how the disease came into the area of the study

(f) Where they think the diseases came from

(g) Whether they have indigenous ways of treating it

When variables ever seen blood in urine was cross-tabulated with what blood in urine associated with it gained a significance greater than 0.01, after chi-square statistic was applied, and a contingency coefficient of 0.68782. This shows that there is a very close connection of blood in urine with the responses given. 74% of those who had seen blood in urine associated it with water. 7% of those who had not seen blood in their urine associated blood in urine with water. 4% of those

who had heard about blood in urine associated it with water. Those who had seen somebody suffering from blood in urine associated it with water bodies. out of one hundred and fifty respondents 45 said that it is caused by eating habits. When the researcher probed further three of the six respondents said that it is caused by eating sugarcanes. for instance a type of sugarcane called "Kampala". The other three associated it with eating (sukari guru) a by-product of sugar. All the six respondent who associated blood in urine with eating habits had blood in urine. Two respondents associated with blood in urine with fishing. One out of two associated blood in urine with fishing had seen blood had seen blood in his/her urine. 1% of those had seen somebody in their urine associated it with snails in stagnant waters 3% associate blood in urine with worms in their stomach. They said that such worms interfer with blood systems and that is why somebody urinate blood. One respondent associated blood in urine with the devil. She associated blood in urine with the devil and said if one breaks God's commandments the consequence is suffering such as having blood in urine. She had heard about blood in urine but she had never seen blood in her urine. Six respondents said they don't know the cause of blood in urine, , four of those who had seen blood in their urine and two of those who had not seen in their urine. Nineteen respondents of those who had not seen blood in their urine gave no answer. two respondents of those who had seen blood in their urine were not sure of the cause of blood in their urine were not sure of the cause of blood in their urine. From the table given there is a clear indication that Got Abiero's people have different etiological notions of diseases. it also shows majority of the respondents associated blood in urine with water. This variable also support the first hypothesis which states that there is a relationship between Schistosomiasis Haematobium and contact with water bodies among the local community in Bondo Division.

TABLE 5.7 BLOOD IN URINE BY ILLNESS AND CASUALTY

	ILLNESS CASUALTY									
EVER BLOOD IN URINE	CONTACT WITH WATER	EATING HABITS	FISHING	SNAILS STAGNANT IN WATER	WORMS IN THE STOMACH	DEVIL	DO NOT KNOW	N/A	NOT SURE	ROW TOTAL
	1	2	3	4	5	6	7	8	9	
YES	80	6	1	2	1		4		2	96
1	74.1	100	50.0	100.0	25.0		66.7		100	64.0
NO	7				1		2	19		29
2	6.5				25.0		33.3	100		19.3
HEARD	3					1				5
ABOUT 3	3.7					100 0				3.3
SEEN	17		1		2					20
SOMEONE 4	15.7		50		50.0					13.3
COLUMN	108	6	2	2	4	1	6	6	19	2 150
TOTAL	72.0	4.0	1.3	1.3	2.7	6.7	4.0	12.7	1.3	100

X^2 = 134.684 DF= 24 P>0.01 CONTINGENCY COEFFICIENT = 0.6782.

At 0.01 probability level there is a clear indication that people have the knowledge where one is likely to get schistosomiasis infection but since they don't have another source of water they still depend on the same water is contaminated.

5. **EVER SEEN BLOOD IN URINE BY THE LOCAL NAME**

the researcher had the opinion that if a disease is common in an area the disease must have a name than a disease which is not common. Out of one hundred and fifty respondents 945 gave 'Aremo' as the local name, 65 % of those who had seen blood in their urine gave 'Aremo' as the local name, 18% of those who had not seen blood in their urine gave 'Aremo' as the local name, 45 of those who had heard about blood in urine gave 'Aremo' as the local name and 13% of those who had seen somebody suffering blood in his/her urine gave the answer as 'Aremo' as the local name. 3% gave 'layo remo' as the local name, 2% gave 'Lach remo' as the local name. Only one respondents gave 'Ndira' as the local name of blood in urine. After further discussions with key informants they informed that is 'Aremo', 'Lavo remo', 'Lach remo' they were and are still explaining the same thing, blood in urine. Therefore the local people in Got Abiero had these three names to describe blood

in urine. According to the key informants 'Ndira' was not a local name for blood in urine, it was for diarrhoea and since the response was given by a respondent who had not seen blood in his/her urine it means he/she had no knowledge on blood in the urine. After Chi-square statistic was calculated it indicated no significant relationship between the variables at 0.01. The contingency coefficiency indicates a very slight significance. Therefore in conclusion whether the people of Got Abiero know the local name or not blood in urine is prevalent in the area. From the table below only one person did not know the local name of blood in urine.

TABLE 5.8 **BLOOD IN URINE BY LOCAL NAME**

EVER SEEN BLOOD IN URINE	LOCAL NAME				
	AREMO1	LAYO REMO 2	LACH REMO3	NDIRA 4	ROW TOTAL
YES 1	92	3	1	96	
	65.5	60.0	33.3	100.0	19.3
NO 2	26	1	1	1	29
	18.4	20.0	33.3	64.0	
HEARD ABOUT3	5				5
3	3.5				3.3
SEEN SOMEBODY	18	1	1		20
4	12.8	20.0	33.3		13.3
COLUMN	140	5	3	1	150
TOTAL	94.0	3.3	2.0	2.0	100.0

$X^2 = 6.41012$ DF=9 P<0.01 CONTINGENCY COEFFICIENT = 0.20244

6. **BLOOD IN URINE BY ENVIRONMENT WHERE BLOOD IN URINE IS COMMON**

When this two variables were cross-tabulated using Chi-square statistic a significance of greater 0.01 was attained. The perception of the environment where blood in urine is common was indicated by the majority of the respondents mentioning various places such as in wet areas, bushy areas, crowed areas, water bodies, one person said anywhere and there were some who did not know. Ninety three respondents out of one hundred and fifty respondents said it is rampant in wet areas, sixty five of those who had not seen blood in their urine said that blood in urine is common in wet areas. 3% of those who had heard about blood in urine is common in wet areas. 3% of those who had heard about blood in urine, 9% of

those who had seen somebody suffering from blood in his/her urine said that blood in urine is common in wet areas. Two respondents said that blood in urine is common in bushy areas. They said in the bushy areas people defecate their a somebody might step on it hence causing blood in urine. 3% said blood in urine is common in water bodies, 5% said th they don't know where blood in urine is common, one respondent said blood in urine could be found anywhere.

This table also goes hand in hand with the first hypothesis relating blood in urine with contact with water bodies. Since w areas and water bodies are almost similar and it also supports (Webbe 1962) observation that snails increase during t daily seasons.

Rainfall generally provides a stimulus to reproduction and an increase in snail population densities hence more people g infected in rainy season. During the dry season there is a decline in snail numbers because they aestivate either under dea vegetation and debris or by burying at least the aperture of their shell in the mud. They emerge after the rains when there water, so those people who associated blood in urine with water bodies, and wet environments had a lot of knowledge blood in urine.

TABLE 5.9 **BLOOD IN URINE BY ENVIRONMENT WHERE URINE IS COMMON.**

EVER SEEN BLOOD IN BLOOD	ENVIRONMENT WHERE BLOOD IN URINE IS COMMON						
	WET AREAS	BUSHY AREAS	CROWED AREAS	WATER BODIES	DON'T KNOW	ANYWHERE	ROW TOTAL
YES 1	65		1	26	4		96
	69.9	25.0	61.9	50.0			64.0
NO 2	17	1	1	7	3		29
	18.3	50.0	25.0	16.7	37.5		19.3
HEARD	3		1		1		5
ABOUT 3	3.2	25.0		12.5			3.3
SEEN	8	1	1	9		1	20
SOMEBODY 4	8.6	50.0	25.0	21.4		100.0	13.3
COLUMN	93	2	4	42	8	1	150
TOTAL	62.0	1.3	2.7	28.0	5.3	0.7	100

X^2= 28.35895 DF= 15 P>0.01 CONTINGENCY COEFFICIENT = 0.39875

EVER SEEN BLOOD IN URINE BY THE TIME OF THE YEAR BLOOD IN URINE IS PREVALENT

The researcher wanted to know when blood in urine is most common in Got Abiero

TABLE 5.10 **BLOOD IN URINE AND TIME OF THE YEAR**

EVER SEEN BLOOD IN URINE	TIME OF YEAR BLOOD IN URINE IS COMMON							
	RAINY SEASON	DROUGHT PERIOD	RAINY DROUGHT	ANYTIME	SHORT RAINS	DONT KNOW	NOT SURE	ROW TOTAL
YES 1	60 69 0	21 65.6	5 71 4	2 66.7	2 33.3	1 14 3	5 62.5	96 64 0
NO2	15 17.2	5 15.6	1 14.3		2 33.3	3 42 9	3 37 5	29 19 3
HEARD ABOUT	2 2.3							
SEEN SOMEBODY	10 11.5	6 18 8	1 14.3	1 33.3	2 33.3			20 13 3
COLUMN TOTAL	87 58.0	32 21.3	7 4.7	3 2.0	6 4.0	7 4 7	8 5 3	150 100 0

= 49 65440 DF= 18 P> 0 01 CONTINGENCY COEFFICIENT = 0 49870

The above table indicates that when Chi-square statistic was calculated the variables time of the year when blood in urine rampant gained significance greater than 0.01. The continency coefficient also indicated a big relationship. This indicates hat blood in urine is so much related with water contact. In the area where the study was carried once there is heavy rain he area becomes waterlogged and since in the are the road passes in a depression which becomes flooded often and all people going to fetch water must go down the valley or depression that is how they become infected by schistosomiasis haematobium.

According to the table above 87 respondents said blood in urine is most common during the rainy season. Most of the people who had seen blood in urine justified that they got it during the rainy season, that is when they were young some respondents further said that they got the diseases through wading in stagnant waters while going to school. 21% said blood in urine is rampant during the drought period. One respondent said it is most common during the drought season because said it is most common during the drought season because during that time water is scarce and therefore many people share

the little water left hence spread the diseases. 2% said blood in urine is common anytime. 4% said it is rampant during the short rains, 5% respondents said they don't know when blood in urine is rampant. 5% said they were not sure when blood in urine is prevalent in Got Abiero.

BLOOD IN URINE BY ETIOLOGICAL, NOTIONS OF HOW THE DISEASE CAME AT GOT ABIERO.

The researcher found out the luo's of GOT ABIERO and elsewhere have a set of believes about the causation of illness and how the illness should be treated are generally accepted by members of the society. The managements of illness is not fixed by custom but rather is infected by a wide variety of factors such as perceived causality of the illness, its seriousness (whether it is fatal or not), whether its common

The respondents gave various sources of where blood in urine came from. The variable gained significance greater than 001 when chi-square statistic were calculated. Contingency coefficient indicated that there was some significance since its result were 0.0332 [illegible]. 24 respondents out of one hundred and fifty respondents gave responses that blood in urine was brought in the area by fishermen fro m lake Victoria. 18 respondents of those who had seen blood in their urine urine said that blood in urine was brought to Got Abiero by fishermen, 13% of those who had not seen blood in their urine said that blood in urine was brought by fishermen, none among those who had heard about blood in urine said it was brought by the fishermen. 13% of those who had seen somebody with blood in urine said that it was brought to Got Abiero by fishermen, 13% of those who had not seen blood in their urine said that blood in urine was brought by fishermen, none among those who had heard about blood in urine said it was brought by the fishermen. 13% of those who has been somebody with blood in urine said that it was brought by fishermen from lake Victoria. Other respondents said that blood in urine was brought by rain water and others claimed that when there is heavy rains the running water collects germs on the ground surfaces and is deposited in streams and later people drink this water and that is how they get infected. 13% of those who had not seen blood in urine said blood in urine came from the waters, 12% of those who had seen somebody suffering from blood in urine said that it came from water. 6 respondents indicated that blood in urine came from water sources. This support further the first hypothesis which relates blood in urine with contact with water bodies. 3% gave responses that blood in urine is brought by snails, 3 out of those who had seen blood in their urine said that it was brought by snails, 1 out of those who had not seen blood in their urine said that blood in urine was brought by snails. One of those who said that blood in urine is brought by snails said that if a person comes into contact with the slippery fluid on the snails body gets blood in his/her urine straight away. 9% said that blood in urine is brought by human waste such as faeces and urine. Some of these respondents were of the opinion that if somebody steps on the urine with blood he/she gets blood in his/her urine

respondents said that blood in urine came from people's waste and they were also among those who had seen blood in urine. 3 of those who had not seen blood in urine said that it was brought by human body wastes. This goes hand in with the hypothesis which states that Schistosomiasis haematobium is associated with sanitary conditions among the community. 2% of those who had seen blood in their urine said that it is brought by eating habits which included ing sugar canes and ' sukari guru'. 3% said that blood in urine was brought to their area by Devil, three of those who een blood in their urine said it was brought by devil, two of those who had not seen blood in their urine said it was ght by devil. Only one person who said it is brought by worms. 9% said that blood in urine is an indigenous diseases area and that it came from nowhere, they said it is an old disease of the region and it has been there since they were some of the respondents. Said it is an indigenous disease of the area, 3 respondents of those who had not seen blood ur urine said it is an indigenous disease of Got Abiero. 71 respondents said they did not know how blood in urine came area. 37 respondents of those who had seen blood in urine stated that they did not know how blood in urine came to m. 15 of those who had not seen blood in their urine also said thy don't know how blood in urine came to their area, 14 ndents also said they don't know how blood in urine came in the area.

LE 5.11 **BLOOD IN URINE BY HOW THE DISEASES HERE**

ER	HOW THE DISEASE CAME HERE								
N BLOOD RINE	FISHERMEN	WATER WASTE	SNAILS	PEOPLE DISEASES	EATING	DEVILS	WORMS	INDIGENOUS	DONT KNOW
S 1	18	12	3	9	3	3	1	10	37
	75.0	75	75 0	69.2	100.0	60.0	100	76.9	52.1
2	3	2	1	3		2			15
	12.5	12.5	25.0	23.1		40.0			21.1
ARD OUT 3									5
									7.0
EN	3	2		1					14
BODY 4	12.5	12.5		7.7					19.7
UMN	24	16	4	13	3	5	1	13	71
TAL	16.0	10.7	2.7	8.7	2.0	3.3	0.7	87	47.3

= 18.36590 DF= 24 P>0.01 CONTINGENCY CEOFFICIENT = 0.33028

The transmission of Schistosomiasis is a complex process for the rural Kenyan population to understand and lack of knowledge on how it is transmitted explains why Got Abiero shows a high rate of infection.

- **BLOOD IN URINE BY INDIGENOUS WAYS OF TREATING BLOOD IN URINE**

When the above variables were cross-tabulated, the results indicated a significance of 0.01. The contingency coefficient indicate a good relationship 73% of those who had seen blood in their urine said that there are indigenous ways of treating blood in urine, 16% of those who had not seen blood in their urine said that there are indigenous ways of treatment. 11% of those who had seen somebody with blood in urine in his/her urine said there are indigenous treatment. Therefore 55% of all those who were interviewed said that there are indigenous ways of treating the disease. 26 respondents of those who had seen blood in their urine said there are no indigenous ways of treating the disease. 10 respondents of those who had not seen blood in their urine said there areno indigenous ways of treating blood in urine. 9% of those who have heard about blood in urine said there were no indigenous treatment. 11% of those who had seen somebody with blood in urine said that no indigenous treatment. 8% of all respondents said they did no know whether there were indigenous treatment of blood in urine or not. Out of which 5 respondents had seen blood in urine. One respondent had heard about blood in urine, three had seen somebody with blood in his/her urine. 7% were not sure whether there are indigenous ways of treating blood in their urine were not sure of the existence off indigenous treatment. 3 respondents of those who had seen blood in their urine were not sure whether there are indigenous ways of treating blood in urine. 3 respondents of those who had seen somebody suffering from blood in urine were not sure whether there are indigenous ways of treating blood in urine. Chi-square statistics indicated that there is a relationship between blood in urine and indigenous ways of treating it. The table indicate that 60 out those who had been infected by blood in urine stated that there are indigenous treatment. When the researcher was highlighting the variables whether there are indigenous ways of treating blood in urine she was of the opinion that if the local community only use indigenous treatment it can contribute to increase of the disease. Since if a disease is not treated completely by consulting the medical doctor it can go on spreading even to those who have never been infected. As it was the case with some of the respondents of Got Abiero. Some confessed that the minute they spotted blood in their urine they turned to indigenous plants for treatment such as 'Ochuoga', 'Ochol', Krandang', Otho', to mention but a few. The same respondence said that after using the plants mentioned then blood used to disappear for some weeks and appear again, and would go to hospital later on after those herbs have failed and traditional medicinemen and women are unable to treat them. This is a clear indication that blood in urine is never taken seriously since it is a slow killer unlike other diseases such as malaria. Some respondents were of the opinion that researchers to gave much attention to malaria, hookworms than schistosomiasis.

ABLE 5.12 **BLOOD IN URINE BY INDIGENOUS WAYS OF TREATING BLOOD IN URINE**

EVER SEEN BLOOD IN URINE	INDIGENOUS TREATMENT				
YES 1	60	26	5	5	96
	73.2	57.8	41.7	45.5	64 0
NO. 2	13	10	3		29
	15.9	22.2	25.0		19.3
HEARD ABOUT 3		4	1		5
		8.9	8.3		3.3
SEEN SOMEBODY 4	9	5	3		20
	11.0	11.1	25.0		13.3
COLUMN TOTAL	82	45	12		150
	54.7	30.0	8.0		100

= 15.64512 DF= 9 P>0.01 CONTINGENCY COEFFICIENT = 0.30733

he disease is not completely treated by consulting the medical doctor, it can go on spreading. Of the variables cross-ulated with blood in urine to test the fourth hypothesis, all of them have gained significance greater than 0.01. Therefore hypothesis have gained significant at 0.01

CHAPTER 6

DISCUSSIONS,CONCLUSIONS AND RECOMMENDATIONS

DISCUSSIONS

The study was basically a description of perception of haematuria (blood in urine) among the local community in Bondo Division Siaya District. Diseases and illness are perceived in various ways cross-cultually. This perception has a lot to do with the action taken incase of illness. According to Durana (1980) perception is one of the key concepts in human behaviour. They constitute a major intervening variables between stimuli and action. Perception of past experience influence perception of present situation

Findings of this study indicate that blood in urine is common in Got Abiero. One hundred and fifty respondents were interviewed and ninety six of them stated that they had seen blood in their urine and this accounted for 64% of all those who were interviewed. 19% of the respondents had not seen blood in their urine. Five respondents had heard about blood in their urine. In Got Abiero urinary schistosomiasis is a common problem. Since even of those who had not seen blood in their urine said that they had more than one case of the disease in their household. This clearly shows that blood in urine is a health problem in the sub-location which needs to be addressed. Findings of this study also reveal that the diseases is well known in Got Abiero because almost all the respondents were conversant with the local name of urinary Schistosomiasis. One hundred and forty one respondents who account for 94% of all those who were interviewed gave 'Aremo' as the local name, five respondents gave "Layo remo" as the local name, three respondents who accounted for 2% respondents gave "Lach remo" only one respondent gave "Ndira" as the local name for blood in urine. The local names used to refer to the disease were descriptive of it's symptoms and none refers to the disease's cause. This suggests that failure of the respondents to associate the names of the disease by it's cause may be due to lack of knowledge on the causative agent.

Despite the respondents lack of knowledge concerning the vector causing the diseases, most of the respondents associated blood in urine with water. Out of one hundred and fifty respondents one hundred and eight associated blood in urine with water which is contaminated. When respondents were asked to give other symptoms of schistosomiasis haematobium apart from blood in urine, they gave the following symptoms: abdominal pain, the body becomes rough and dry, pain while urinating, loss of appetite, loss of weight, tiredness, itching of the body. At least one of those symptoms was given by one hundred and forty respondents. Ten respondents who accounted for 6.7% of the total respondents stated that they did not know the symptoms of schistosomiasis haematobium apart from blood in urine symptoms portrayed by the one hundred and forty respondents indicate familiarity with the diseases. It seems that over a long period of exposure to the disease the

people have come to learn it's other symptoms apart from in urine.

There was a general consensus among some respondents that blood in urine could be cured and also prevented using the herbal medicine such as 'Ochuoga', 'Kaladal', 'Ochol', 'ober Obino', 'Pedo', Yago, 'Nyanj'agaa', 'Ombasa'.

They were of the opinion that if one has blood in his/her urine and takes herbal medicine made from the above plants either by boiling roots or their leaves and taking the soup one becomes cured. Some respondents were of the opinion that if one diarrhoeas after taking herbal medicine, that is a clear indication that he/she is cleansed therefore he/she recovers. This problem of blood in the urine is not new in Got-Abiero Sub-location as it is indicated by various herbal medicine is used. The respondent stated that they only try morden medicine when they have tried traditional medicine and it has failed. This is a clear indication that modern medicine is taken as an alternative and that people still; cling to their traditional medicine up top today. This shows clearly that in Got-Abiero people stay for a long period with the disease and this can promote it's spread due to their unhygienic way of disposing their urine. Findings revealed that people in the study area relied on traditional medicine to a large extent due to various factors. First the community in Got-Abiero were of the opinion that some traditional herbs are relied on because in the sub-location there is no health facility not even one, therefore residents of Got Abiero have to travel all the way to Bondo town where there is a government health centre or visit some private clinics. The distance between Got Abiero and Bondo town is very long for a sick person to travel without having to board a matatu which are also rare to get. The estimated distance between Got-abiero and Bondo is about 17Kms. This goes against world health organisation recommended distance to the nearest health facility in the developing countries, it is supposed to be at a radius of 4 Km. They also lack money for transport from their homes to Bondo Health Clinic Centre, communication is also another problem since the study area is served by only one seasonal road and during the rainy season the roads becomes impassable. After considering the factors given above one can draw a reasonable conclusion that all these factors in a way predispose the local people in Got Abiero Sub-location to cling to their traditional medicine. It is a widely held opinion by respondents that at the government health facilities adequate dosage are never given since they are few and one might not be treated due to lack of drugs. Others expressed the view that in government and private health centre, injection are prescribed in most cases and they fear injection hence turned to traditional herbs.Whether blood in urine can be managed by herbal medicine or not is beyond the scope of this study and it can be subjected to test.

According to Kroeger (1983: pg 148) old members of the community are slow in discarding most of their traditional beliefs. Among these are religious and medical. They also have a wealth of experience as regards diseases causation and treatments. According to Kroeger (1983: pg 150) if cure is not forthcoming from one source of therapy another would be tried.

Most of respondents indicated that blood in urine is not dangerous as compered to other diseases such as malaria. However, some of the respondents fear that if one stays for many days with blood in his/her urine it can lead to sterility. Therefore due to this perception, if measures are called upon to eradicate urinary bilharzia the highest probability is that it would succeed easily since most African societies value children.

According to Osero society defines illness due to its cultural patterns. Some individuals recognise particular physical symptoms such as pain, fever, blood in urine, nausea and seek out a physician for treatment. Others with similar symptoms may attempt self-medication or dismiss the symptom as not needing attention, all these have to do with the people's perceptions on the symptoms for instance, blood in urine is considered as a normal situation by some societies and it has been associated with coming of age among the male children Stanely (1975).

In the study area blood in urine was and regarded as an abnormal condition. When the respondents were asked whether blood in urine has any significance in the society one hundred and forty eight respondents who accounted for 98.7% of all those interviewed indicated that it has no significance and negliable two respondents 1.3% said the significancant of blood in urine is that once somebody has been infected once she/he can never be infected again.

In Got Abiero sub-location some female respondents were of the opinion that blood in urine is a sexually transmitted disease and were not very much ready to talk about it. This goes hand in hand with (WHO 1995) report which indicated that blood in urine has social significance in some communities; for instance in men it is often taken to signify vivirity in women a sexually transmitted disease so women may hide their symptoms to avoid punishment by their husbands fro sexual misconduct. Therefore evidence from the study indicated that the residents of Got Abiero have a negative perception towards blood in urine.

In Got Abiero sub-location there is an acute problem of water and the whole of the south Sakwa Location. People depend wholly on water supplies from sources outside their households (a typical characteristic of the majority of Kenya's rural households) most of which are healthy carriers of Schistosomiasis cecariae. Although urinary schistosomiasis is associated with morden irrigation schemes in Got Abiero there are no irrigation is still very high. One is therefore forced to draw a conclusion that the ponds and streams which are found in the area harbour snails which are schistosomiasis haematobium carriers. The ponds and streams provide a greater percentage of domestic, economic and recreational water supply in the area. This water-bodies serves so many people especially during the dry season and this explains the high prevalence of infection with Schistosomiasis haematobium in the area.

Water plays a vital role in human life and lack of safe water supplies in rural area force people to go into contact with

fected water. If people can boil and stop going into contact with infected water schistosomiasis and other water borne seases can be terminated. Experience has shown that in Kenya this is just a theory since the local communities claim that ey have used water sources without employing such health measures since time immemorial not to mention the burden of iling water which is a laborious activity. In the study area people probably boil drinking water only if their cognitive ality about water has lead them to define water as a health hazard only when one drinks it not when one wades or bathes it. Thus under this circumstances drinking water is seen as dangerous because it goes into the body while bathing water es not.

cording to research findings one hundred and eight respondents who accounted for 72.0% associated blood in urine with ater although they lacked the biological explanation of how the symptoms is related with water, eighty respondents who ssociated blood in urine with water, has seen blood in their urine. Therefore one can say that inspite of those people having me knowledge that one can get blood in urine through coming into contact with contaminated water they still continue ing the same water at the same time with those who don't associate blood in urine with water since they don't have ternative source of water. The association of schistosomiasis haematobium with water makes it stand out among the arasitic diseases since water is indispensable to life and lack of adequate supply of it constitutes a serious environment roblem.

he snail which is a host of Schistosomiasis cercaric also prefers staying in water bodies and in wet areas. According to the spondents when asked where snails are likely to be found the fifty three respondents indicated that they are usually found moist areas and ninety seven respondents who accounted that snails are found in water bodies. This is in line wit Webbe's 962) observations that snail's population increases due to seasons. According to Webbe rainfall generally provides a imulus to reproduction and an increase in snail population densities. In the late dry season a rapid decline in snail number curs and many snails either aestivates either under dead vegetation and debris or by burying at least the aperture of their hell in the mud, after the start of the rains when water is present the snails emerge from their destination. This supports the spondents views when they stated that snails are usually found in water bodies and moist areas

rom the general overview one can conclude that blood in urine is a big problem in Got Abiero sub-location. This goes hand n hand with Hillel (1977) argument that in some tropical countries more than half the food grown and consumed by the oor goes to feed the parasitic worms which infests their bodies. He further continues to say that parasitic diseases are a articular problem in the tropics. From the data collected majority of the respondents had seen blood in their urine and the thers confessed that they have ever heard of people with blood in their urine. Only twenty nine respondents who had not

blood in their urine, neither heard of somebody with blood in urine nor seen somebody with blood in urine

was observed that in the area where research was carried there was lack of safe water supplies and basic sanitation

ilities coupled with malnutrition and poverty. They also lack the technology top reduce the ill effect of unsanitary living

ditions which lower their enjoyment of health life and their productivity. The problem is particularly tragic because it

the children who are the most vulnerable. The prevalence of diseases caused by unsanitary conditions will therefore only

reduced if and when communities in the third world have adequate water supplies, adequate and safe methods of

sposing human wastes.

CONCLUSION.

POTHESIS I

here is relationship between schistosomiasis haematobium infection and contact with water bodies. After the data analy-

s the above hypothesis was accepted. The variables which were cross tabulated with blood in urine include the following,

hether there are water bodies near the respondents homestead? Distance of water bodies, type of water bodies, source of

mestic water, whether respondents boil water and whether respondents knows how to swim.

e variables water bodies near respondents homestead attained significance at 0.01. This was a clear indication that the

pe of water used in the area is contaminated and it hosts snails which acts as a carriers of cercarie. Again 64% of all those

o were interviewed indicated that they have ever seen blood in their urine. Others indicated that they had such cases at

ar homes at one time or the other.

hen variables type of water bodies available was cross tabulated with blood in urine it gained significance at 0.01.

e cells indicated very clearly that those who were near water bodies majority of them had seen blood in their urine than

se who lived far way from water bodies. The findings revealed that the nearer one is to the water bodies the higher the

ances of being infected, although even those who lived far away from the water bodies where also infected by schistosomiasis

matobium. The reason behind distance being very important in Schistosomiasis infection is that most people who live

ar water bodies spend long hours along the water bodies. They are forced to frequent water sites most of the time since

their water related activities are carried along the water bodies, eg. Washing clothes, bathing, washing utensils etc.

hen variables type of water bodies available was cross-tabulated with blood in urine it attained significance at 0.01.

cording to the results those respondents who were interviewed had water bodies such as ponds and streams. Research

dings revealed that no matter which water body one lives near it acts as a source of infection. Although those who lived

ar the ponds showed a higher prevalence of infection than those who lived near the streams.

ams water for domestic purposes, majority of the people used ponds water and hence the great number of people who seen blood in their urine. One can also say that both ponds and streams water are contaminated

able boiling water when cross- tabulated with blood in urine gained significance at 0 01 Results revealed that a great ber of the respondents boils domestic water but they only boil drinking water. The results revealed that all those who not seen blood in their urine boil water. The complexity of Schistosomiasis places anybody who comes into contact t contaminated water at a very high risk.

en variables knew swimming was cross-tabulated with blood in urine it gained significance at 0.01 level. The findings ealed that majority of those who swim had seen blood in their urine. Those who swim spend long hours swimming and se increase their chances of being infected. Again most people prefer swimming between 12 noon and 4 pm. Coincidelly s is when the snails release large amount of cercaric hence they get infected

m the above evidence one can conclude that one who comes into contact with contaminated water stands a high chance getting schistosomiasis haematobium infection

POTHESIS II

istosomiasis haematobium is associated with gender based w kinship role in the local community in Bondo Division.

t above hypothesis was tested using various variables such as sex, whether there is a disease affecting morer males than males, who fetches domestic water, who washes clothes for the family, who feed cattle in the homestead, who is supposed engage in fishing, who makes fishing traps

search finding revealed that after variables sex was cross-tabulated with blood in urine gained significance at 1%. Morer ales had seen blood in their urine than females. Out of ninety six respondents who had seen blood in their urine fifty nine them were males. The cultural explanation for morer males being infected than females could probably due to the llowing reasons; males get more dirt than females due to their duties such as phouling and digging and therefore needs quent bathing especially after their daily activities. In the area like Got Abiero with scarcity of water they have to go to e streams and ponds to bath there needless to speak about the labour involved in drawing water for bathing

n the study area there are alot of bushes along the ponds and streams to provide enough cover for adults to bath in the treams and ponds

emales require more privacy than men for bathing therefore streams and ponds are not private sites for females to bath in

time for bathing also coincides with the time when cercariae is sent in the streams and ponds in great quantity. The searcher observed that majority of men like bathing in the afternoon.

hen variables domestic roles was cross-tabulated with blood in urine it gained significance. Cultually women are the ones ho are supposed to fetch water for domestic purposes.

though more men had seen blood in their urine than females more than half the number of the females who were terviewed had seen blood in their urine. A good explanation for this is that women spend alot of time fetching water for omestic use.

When the role of washing clothes was cross-tabulated with blood in urine it gained significance at 0.01. Washing clothes is ulturally a role of women, and this explains why some more than a half of the women were interviewed and seen blood in eir urine. When the role of feeding cattle was cross-tabulated with blood in the urine it gained significance at 0.01. erding animals is a role of males, the researcher observed that men were grazing animals and at the same time watering em. Males spent alot of time them. Males pent alot of time watering animals especially when forcing young calves drink ater. This gives a good explanation why more males had seen blood in their urine than women.

ulturally the role of fishing is considered to be men's task, incidentally in the study area women also participated in ishing, but to a smaller extent as compered to men. This being the case most men had seen blood in their urine than women. When variables who makes traps was cross-tabulated with blood in urine it gained significance. According to the cells fish raps are made by men, and since there were bushes along the water bodies where they got materials for making fish traps his in a way exposed them to contaminated water, hence the high level of infection in males than females. Therefore ccording to the research findings gender based kinship roles enhances the chances of Schistosomiasis infection through oming into contact with contaminated water.

HYPOTHESIS III

Schistosomiasis haematobium infection is associated with sanitary conditions among the local community of Bondo Division. The above hypothesis was tested using various variables such as whether the respondent use latrine or not?, whether there is a latrine in the respondents compound, how long was the latrine taken, the distance of latrine from the responden house, place of urination of the respondent and whether the old and the young share the latrine.

When all these variables were cross-tabulated with blood in urine they attained significance at 0.01 level. From the re search finding there is a clear indication that more than a half of those people who were interviewed don't use latrines. Th researcher also discovered that even those people who had latrines use them only during the day but at night they excrete i

bush. Those watering animals, fetching water, help themselves in the bushes along the ponds and streams. For instance
ten variables where respondents urinate was cross-tabulated with blood in urine the results indicated that only fourteen
spondents out of all those who were interviewed urinate in the latrine. Even those who had latrines confessed that they
inate anywhere. In the area urine is never taken seriously and this also includes its disposal. People have been socialised
look at human urine as harmless. In the study area the researcher observed young boys urinating at the same along the
ater bodies for fun. In the area there is a sanitation problem arising from improper disposal of excreta. While some
mesteads had pit latrines for sanitary disposal of faeces and urine the majority of people do not have schistosomiasis
ematobium is a water borne disease and it depends on the contamination of water. Therefore poor environmental sanitations
vour its transmission. The behaviour of the local people in regard to human waste disposal determines the prevalence of
Schistosomiasis haematobium. Thus from our findings it can safely be concluded that blood in urine is rampant in Got
biero, due to unhygienic disposal of human wastes.

HYPOTHESES IV

There is a close relationship between schistosomiasis and folk etiological notions of the local community of the Bondo
Division. The above hypothesis attained significance at 1% when it was cross-tabulated with blood in urine. Nearly all
communities have theories about the cause and more effective cure of not only minor but also complicated frequently
ccurring ailments. Health perceptions and practices as well as cultureremedies are to a large extent determined by a
people's culture. So all cultures have beliefs and practices or causes of illness and other misfortunes such as conflicts
atural disasters and accidents. In every culture consequently health and illness beliefs mean that people know how to
ttribute the cause. Illness among African societies is often attributed among other things in breaking by evil spirits curse
rom parents or an offended neighbour and supernatural agents like spirits.

Ngubane (1977) indicated that the African societies also associated illness with African world-view such diseases emanate
from the fact that human kind and their universe are inter-related.

In Got Abiero sub-location blood in urine was believed to have been caused by contact with water, eating habits, fishing
snails in stagnant waters, worms in the stomach and the devil, others did not know what to associate blood in urine with and
two respondents were not sure of the cause. Even those people who associated blood in urine with water and snails in
stagnant water were lacking the knowledge about how blood in urine is transmitted since its mode of transmission is
complicated for local people to understand.

When variables indigenous methods of treating blood in urine was cross-tabulated by blood in urine it attained significance
at 0.01 respondents of all who had seen blood in their urine stated that it can be treated by using traditional herbs. Eight

wo respondents who accounted for 54.7% stated that blood in urine can be treated using traditional medicine. The findings dicated that those who see blood in their urine first try traditional medicine before going to the hospital and in any way is can lead to spread of schistosomiasis haematobium. When the environment where blood in urine is rampant was ross-tabulated with blood in urine it gained significance at 0.01. Ninety three respondents who accounted for 61% of the tal sample stated that blood in urine is common in wet areas and 28% indicated that it is common in water bodies. The nswer given make one to conclude that in Got Abiero sub location there are some diseases which people perceive to have een caused by contact with water such as Schistosomiasis haematobium. Efforts were made to extract more information n why the respondents viewed such areas as suitable sites for one to get blood in urine. 70.7 % of the respondents who ere nterviewed indicated that in such areas there are water organising, 10 % indicated that there are snails in such areas. thers indicated that there are lizards, frogs and mosquitoes which can cause blood in urine. Other respondents said that irt in such areas cause blood in urine, others talked of crabs in water, human urine, people from other areas and some espondents stated that they don't know. These findings reveal that in Got Abiero people are not very far from establishing he cause of blood in urine. In the time of the year when blood in urine is common was cross-tabulated with blood in urine t gained significance at 0.01. According to the majority of the respondents, blood in urine is common during the rainy season. The problem is acute because people in Got Abiero have to rely on contaminated water and environment since they don't have an alternative.

Findings revealed that blood in urine in Got Abiero is perceived as an abnormal condition, most respondents indicated that it is a disease and if one takes long with it can lender him/her sterile.

The study found that there is an apparent link between people's perceived etiological notins of blood in urine with its infection. In the study there is a clear evidence that etiological notins also contribute substantially to the health service utilized which can also lead to eradication of a disease or promote its spread especially if it is not completely treated there is high probability of those who are infected to continue spreading.

5.3 RECOMMENDATIONS.

The findings of this study are directed to researchers, policy makers who are concerned with public health and are interested in improving the health standards in rural areas (communities)

In Got Abiero sub-location there is a need for health education because if people do not enjoy full health then they cannot make full use of economic potential of their country without good health young children cannot fully take full advantage of the increasing opportunities which are available to them. For this reason it is very important for all people to be educated

ways to obtain good health and to maintain it.

alth eduction according to world health Organization (1969) is defined as all those experiences of an individual, group mmunity that influence beliefs, attitudes and behaviour with respect to health as well as the process and efforts of ucing change when this is necessary for optimal health. It primarily address itself to the systematic process of persuad- people to change their responses to diseases problems through adequate motivation. The public must be included in blic health education because lack of understanding and support by the public means that information given and knowl- may not lead to recommended actions if they conflict with existing beliefs practices, attitudes, values and norms of the ety. Diseases such as schistosomiasis and others that cause a lot of suffering to the majority of Kenyans can be ented if people know how to live a better and healthier life. According to the report from the health Educaion depart- nt of the ministry of health (1979) approximately 70 - 79% of the health problems are preventable if individuals families communinutes are informed and educated on essential health topics such as hygines and sanitation. Therefore it is the earchers's view that health eduction is the most important diseases preventive measures in the study area Got Abiero location and other rural areas of Kenya. Health education and modifying personal habits.

s recommended that after the health eduction programme is initiated a further Anthropological study should be carried to measure and evaluate the behaviour changes in regards to water contact by the local community of Got Abiero Sub- ation. Unless a change in behaviour of the rural people is acheived through health education people will still continue examinating the water with their urine and faeces and as a result infection with schistosomiasis haematobium and other ated water borne diseases will continue to threaten human life and health. The people should be made aware of practices ely to expose them to infection, The vectors habit and ways in which they can prevent themselves.

s also recommended that the snails in the ponds and streams of Got Abiero Sub-location should be destroyed by the use nulloscides and also the bushes and weeds along these water bodies should be cleared since they offer good food for the ails.

Got Abiero Sub-location is lacking health facilities, due to this reason the government should help the local area by tablishing health centres within easy reach of the people. People from Got Abiero sub-location travel for very long tances in order to look for health facilities. Due to this factor majority of the people turn to traditional medicine and they ly turn to modern medicine when traditional medicine have failed. A section of people instead of trying morden medicine an alternative they dismiss their sickness as no needing attention. Like any other desired things in life good health takes ace in every ones personal priority scale. This being the case if the local community in Got Abiero is supplied with health

facilities they would be in a position to have a healthy life

It is also recommended that for the time being Bondo Health Centre should be well equipped with drugs of all diseases and also it should have adequate staff members from various parts of Bondo Division. Those people in Got Abiero who has blood in their urine should be treated to avoid further spread of the disease.

It may also be necessary to test the traditional herbs used by the local community in Got Abiero to establish whether they are effective or not. If they are effective then it would be necessary to establish institutions for traditional healers so that their knowledge can be utilized easily, or have them work on a full time bases with morden trained medical staff members.

It is also recommended that people in Got Abiero should be provided with safe water sites to avoid infection. They should also be warned against urinating near places where there are water bodies. In case where dams are being constructed to provide the population with water it is suggested that care must be taken to make sure that these dams do not become breeding grounds for snails, host of Schistosomiasis disease. But the most important recommendation of all these is health education.

In the absence of a reliable cure instituting morden sanitation practices, purifying drinking water and providing rubber wading boots for those who must work in water would go along way toward halting the spread of Schistosomiasis. The mentioned measures are both expensive and impractical in many rural areas of Kenya and other developing countries.

Schistosomiasis and other water borne diseases can only be eradicated if they receive co-ordination and co-operation among such groups as sanitary engineers, clinical specialists. Anthropologists, sociologists, health educators and biologists. Musau (1977).

Schistosomiasis should also be given the attention it deserves since it is a slow killer and it does not cause spectacular epidemics and mass death. Due to this it fails to attract the concentrated attention it deserves. Much attention is given to other diseases such as Malaria, Small pox etc.

The study on blood in urine is not conclusive but it sheds light on Got Abiero's people perception on blood in urine. However some issues arise from the study which are open to future research eg.

1. Since the study shows that majority of the people had seen blood in their urine it would be important for medical doctors to examine people in Got Abiero sub location in order to establish the intensity of the problem and to check whether there are people with long side effects of blood in urine.

2. From data analysis their was a clear indication that more males had seen blood in their urine than females, a further research should be conducted comparing the ages to establish which age group is prone to Schistosomiasis haematobium than the other.

BIBLIOGRAPHY

Arnold Pacely 1977, Sanitation in developing countries. New Yolk Ross Institute of tropical hygine. PG 92 -107

Ashitey 1979: Management and control of urinary schistosomiasis African health training Institute

Bajpai 1990: Methods of social Survey and research. New Delhi. Kitab Ghar, Acharyan agar. Kanpur 3.

Giba 1974: Foundation Symposium on bilhazia London. J.A. Churchill

Cowper. S.G. 1971: A synopsis of africa Bilharziasis London H. K. Lewis & Co. Hazel Watson and Vineyly.

Crewe W. 1985: Parasites and Human Diseases. Great Britain Edward Arnold, Richard clay.

Danie B. Suits, 1966: An introduction to quantitive economic research. Chicago Rand Mcnally & Company PG. 258

Erick P. E. 1977: The picture of Health Environmental sources of diseases. World Watch Institute Norton & Company Pg 174 - 188

Faraooq M. Hairston N. G. , Davis, A., MacDolnald D. B., Mullien. Olivier L. J., 1966. Human schistosomiasis control. public health Importance and prevalence. Switzerland.Basel. Kargers

10. Forsyth, D. M., 1966: The consequences of Bilharziasis. bulletin of WHO 34: 715 - 735

11. Holmes 1966: Health Education in Developing Countries.Britain. London. English Language books Society of Nelson Thomas Great.

12 Jack Smolenky, Franklin B. 1967: Principles of community Health London. W.B Saunders Company Phizadelphia.

13 Jary, D.M. 1967: Humjan Parasitology. London, Oxford University,

14. Djombo 1986: You and your Health. Heineman Kenya Ltd

15. John M. Last 1986: Public Health and Preventive Medicene., Appleton Century, Donald Heyneman

16. Jordan P. 1969. Human Schistosoma, London,William Heineman

17. Jordan P. & Webbe 1982: Schistosomiasis. Epidemiology Treatment and control.London. William Heineman

18. Kenneth Prewitt 1971: Introductory Research Methodology. East Africa Applicauons

19. Kenya Government 1994 - Siaya District Development Plan 1994 - 1996,Nairobi,Governement Printers.

20. Kenya Government: 1988 Annual Report. Division of vector borne diseases. Ministry of health

21. Kinoti G. 1964: A note on the susceptibility of some gastropod Molluses to schistosomiasis bovis and S Matheei Institute of Medical Research of Tanzania.

2. Kokwaro J. O 1980. Luo English Botanical Dictionary of plant names and use Nairobi East Africa Publishing House

3. London school 1974: Hygiene and Tropical Medicine. Bulletin No. 6, Ross Institute.

4. Mandahl Barth 1958: Immediate host of Schistosoma. Ganeva, World Health Organisation

5. Markell & Vogel 1981: Medical Parasitology. London, W.B. Saunders & Company.

6. Metrick 1976: Clinical Parasitology. London, Henry Kimptom Press

7. Mozley A. 1953: A background for the prevention of Bilharzia. London, H.K Lewis & Co. Hazel Watson & Vinely.

8. Musau 1977: Water contact and its relationship to schistosomisis Mansoni in lower Nduu M. A Thesis sociology Department Nairobi University

9. Munguti J Kaedi 1981: A study of knowledge altitudes and practice relating to Vissceral - Leisnmanisasis (Kalazar) in Tseikuru Location Kitui District, Kenya M. A Thesis Sociology department Nairobi University

10. Muthaka Ben: Parasitic Diseases defy vaccines a feature in the standard newspaper. the April 2/ 1991

11. Najarian H. H 1967: Text Book of Medical Parasitology. Williams & Williams Co. Baltimore. U.S.A.

12. Pamba O. H. 1979: Schistosomiasis in Nyanza Province Kenya. Rusinga Island The East African Medical journal Volume 56 no.3 1979, PG 76

33. Peem secretariat 1983: Panal of enviromental management for vector control,
Geneva, world health organization,

34. Ouma J. H. Waithaka F. 1978: Schistosoma Mansoni and Schistosoma haematobium
in Kitui District. Kenya. The East Africa Medical Journal.
Volume 55, No 3, 1978 pg 54-70:

35. Owor R., Madda J.p 1977: Schistosomiasis causing tumour like lesions East African Medical Journal.
Vol. 54 No.3, 1977 pg 137 -145

36. Ralph Muller & E.R Taylor 1978: The relevance of parasitology to human welfare today. London.
Black well scientific publication. Gotswold

37. Raiph Muller 1975: Worms and diseases. London. William Heinemann Medical Books.

38. Robert Waigate 1995: Gender and tropical diseases. Switzerland. 93/9847
Filonosa.

39. Routledge & Kegan 1977: A Dictionary of Social Sciences. London Hugo F. reading

40. Stanley N. F. 1975: Man made lakes and human heaalth. London academic press.
Harcourt bracc Javdvich

42. Taylor E.R. 1968: British society for parasitology immunity to parasites. Black well scientific
publications Oxford and Edinburg University

43. Vogel 1974: Health and diseases in Kenya, Nairobi East Africa Literature Bureau

45. Vogel l.c, Muller A.s Odingo R.S. Onyango z. Degeus A. 1982: Health and diseases, Kenya. Kenya literature Bereau

46. Walton 1980: Environmental health. Japan. Tokyo. Academic press inc.

Walter Beck 1971: Medical parasitology, London, C.V Mosby Company & Saint Louis

Weisebrod B.A 1973: Diseases and Economic development. U.S.A.,the University of Winconsin

Werner David 1987: Where there is no Doctor. London.Macmillian Publishers.

Institute of child health

W.H.O 1991: Basic Laboratory methods in medical parasitology. Geneva. Switzerland

W.H.O. 1972. Health Hazards of the human environment. Geneva

W. H. O. 1983: Plant Molluscides. Geneva. John Willey and Sons

W. H. O. /FAO / UNEP. 1998: Links Between Agriculture and Vector - borne diseases PEEM Newsletter No. 20 March 1988

World Bank Report May 1974: Enviromental Health and Human Ecological considerations in Economic Development Projects U. S. A., Washington D. C. 204. 33

APPENDIX

QUESTIONNAIRE ON SCHISTOSOMIASIS HAEMATOBIUM

Habari.

Good day to you. My name is ..... and a student from the University of Nairobi. I am carrying out a study of Schistosomiasis haematobium. The findings of this study will be used to write a master of Arts (Anthropology) thesis. I hope you will spend some time to answer the questions. All information collected will be treated as confidential.

1. Name of respondents .....

   Sub-location .....

   Village .....

   Sex (i) Male ..... (ii) Female .....

2. How old are you .....

3. How many people live in this village? .....

   (i) Male ..... (ii) Female .....

4. What is your level of education?

   (i) None .....

   (ii) Lower primary .....

   (ii) Upper primary .....

   (iv) Secondary .....

   (v) University .....

   (vi) Others .....

5. Have acquired any practical training apart fro formal education?

   (i) Yes..... (ii) no .....

6. If yes what kind of training?.....

7. Do you have a salaried Job ?

   (i) Yes..... (ii) No.....

8. If yes mention the job .....

   (If answer to 7 was no answer 9).

9. What do you do to earn your leaving?

.....

10. What is your income?

Between	0	-	500
	501	-	1000
	1001	-	1500
	1501	-	2000
	2001	-	over

11. Do you have any other source of income ? .....

12. Is there anybody else in this house with a salaried job?

(i) Yes..... (ii) No .....

13. (If yes who) ?

.....

14. What is your source of energy ?

(i) Wood (ii) Kerosine (iii) Gas (iv) Electricity

15. Are there water bodies nearby?

(i) Yes ..... (ii) No.

.....

16. If yes mention them

.....

17. How far is your drinking water from the house?

(i) Less than 200 metres

(ii) Less than 400 metres

(iii) About 800 metres

(vi) More than 800 metres

18. Where do you get water from

(i) Stream

(ii) Swamp

(ii) Well

(vi) Pipe

(v) Lake

(vi) Pond

(If answer to 15 was yes answer 20-21)

20. Do water bodies flood?

(i) Yes ..... (ii) No.....

21. If yes what activities are carried on the flood plains?

.....

22. Is water ever boiled in your home?

(i) Yes ..... (ii) No .....

23. Explain why water is not boiled ?

.....

24. Do you store water in the house?

(i) Yes ..... (ii) No .....

25. If yes where do you store water ?

(i) Stone tanks

(ii) Drums

(ii) Pots

(vi) Tins

(v) Others

26. If you store how long ?

(i) 1 day (ii) 2 days (iii) more than three days

27. Do you know how to swim ?

.....

If yes where do you go for swimming ? .....

What time of the day ? .....

Where do you do your bathing? .....

Have you taken a bath for the last two weeks ?

(i) Yes ..... (ii) No .....

If you were to bath in a river, which water would you choose ?

(i) Fast flowing

(ii) Slow flowing

(ii) Stagnant water

33. Do you use latrine ?

(i) Yes ..... (ii) No.....

(If no explain why)

Is there a latrine in this home?

(i) yes ..... (ii) No .....

How long ago has it been there ?.

- 6 years
- Between 3 -6 years
- Between 1 - 3 years
- Less than 1 year

How far is it from your houses ?

- 10 m
- 20 m
- More than 50 m

?. Does it over flow during the rainy season ?

38. Where do you urinate?

- Latrine
- Field
- Canal
- Stream

39. Do you ones use the same latrine with the elders?

(i) Yes ..... (ii) No .....

40. If no. reasons .....

41. Who is the house head ? .....

42. What are the duties of the mentioned ? .....

43. Who draws cooking water ? .....

44 Who washes clothes ? .....

45 Who feeds the cattle ? .....

46. Can anyone be engaged in fishing (female/male)?

(i) Yes ..... (i) .....

47. Explain reasons for the above answer .....

48. Who makes the fishing nets .....

49 Where do you get materials ? .....

50. Are there diseases which affect more men than women ?

(i) Yes ..... (i) No .....

51. Mention if any? .....

52. Has anybody been ill in this house for the last 2 months? .....

53. Where was he suffering from ? .....

54. What was the possible causes? .....

55. Where was he treated ? .....

56. Are there taboos or social practices which can lead to various?

(i) Yes ..... (ii).....

4. If yes which ones ? .....

5. Have you ever seen blood in the urine?

(i) yes ..... (ii) .....

6. If yes what did you associate it with ? .....

7. What is the local name of Schistosomiasis haematobium ? .....

8. Do blood in urine have significance in this community ?

(i) Yes ..... (ii) No.....

9. If yes which ones ? .....

10. Which environment can you get this disease? .....

11. Why ? .....

12. What time of the year can you get this disease? .....

13. Is there any time of year when most people get this disease?

(i) ..... (ii) .....

14. How do you think the disease came here ? .....

15. Where do you think it came from .....

16. Are there indigenous ways of treating it ?.....

(i) yes ..... (ii) No.....

17. Which are the ways .....

18. Where are you likely to get snails ?

- Dry areas
- Moist areas
- Top houses
- In water bodies

19. Is a snail of any economic importance in the community

(i) Yes ..... (ii) No .....

73. If yes specify .....

- Dry areas
- Moist areas
- Top of houses
- In water bodies

72. Is a snail of any economic importance in the community?

(i) Yes..... (ii) No .....

73. If yes specify .....

74. What are the symptoms of schistosomiasis haematobium?.....

75. Do you know any preventive methods of this disease?

(i) Yes ..... (ii) .....

76. If yes. Specify .....