



Contribution of Socio-Anthropology in Schistosomiasis Control - TAABO/Côte d'Ivoire Experiment

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Abstract

Introduction: Schistosomiasis is the most common parasitic disease in the world after malaria. 85% of affected populations live in Africa. Clinical complications are many. WHO notes that on average 46 people die every hour of Schistosomiasis in the world. The health and economic impact of this epidemic appears indisputable. Several endemic foci are reported in Côte d'Ivoire. Most research work in relation to this is carried out from biomedical and geographical perspectives. Actually, how can you lead an effective program to control this epidemic if risk behaviours are ignored? This is the fundamental issue that justifies the scientific relevance of this study. Biomedical and geographical perspective cannot be the only way to propose a comprehensive and permanent solution. Failure to focus on issues involving risk factors associated with humans in this case, limits the effectiveness of such control. This is why it is important to involve socio-anthropology in order to establish a multidisciplinary field of Schistosomiasis control.

Methodology of Work: The study area is Taabo region, located in the centre of Côte d'Ivoire. The study area consists of five (5) sites: Ahondo, Bonikro, Léléblé, Taabo-village and Takohiri. This is a qualitative study. The survey population consists of key informants. Collection techniques are the same as a documentary research method, direct observation and group interviews with key informants.

Results: Physical characteristics : The physical environment of the region has a mixed character astride the savannah and forest. It is an area around the Bandama River large dam where a variety of surface water sources are found.

Schistosomiasis: Is not seen as a pathological fact as far as the community is concerned. Indeed, it is not considered a serious disease.

Human risk factors: Most human activities associated with water are carried out in the multitude of surface water sources. Moreover, the virtual absence of latrines in communities is an increased risk factor as regards contamination of the disease.

Social aetiology and parasitological treatment perception: Field data show a completely wrong aetiology based on a parasitological treatment that is not in line with reality.

Conclusion: The socio-anthropological study focused on lifestyle has actually highlighted the belief system of the observed populations, their way of life and their social practices that promote endemic Schistosomiasis. The interest of this study was to make these socio-anthropological findings available so that the communicative dimension of the control of the disease should consider them in its communication activities for behaviour change. This is one of the conditions for a more effective Schistosomiasis control.

Keywords: Anthropology; Health education; Community health; Schistosomiasis; Taboo

Introduction

Schistosomiasis is a parasitic infection caused by Schistosoma kind of worms. Schistosomiasis is the most common parasitic disease in the world after malaria. Its various forms are endemic in 76 countries. Of these, 42 are found in Africa. Moreover, of the 207 million people infected, 85% live in Africa. Parasites of the disease being common in freshwater, then the most at risk of contamination are farmers, fishermen and women who mainly carry out such activities as washing up clothes, etc., in there.

WHO notes that Schistosomiasis may cause some skin, cancer (bladder), cardiac and pulmonary (high blood pressure) complications; it may also cause infertility due to affected genitals. In addition, the Organisation notes that 46 people on average die every hour of Schistosomiasis in the world. As a result of this fact observed, the endemic Schistosomiasis has a real impact on the economy and health where it occurs. Therefore, to improve the socio-economic status and well-being of populations in endemic areas of this disease, studies and awareness actions have been implemented.

Côte d'Ivoire is no exception to this rule because a multitude of

endemic foci of Schistosomiasis have been listed in there, especially in the West [1], Centre [2], the Southeast [3], Southwest [4] etc.

Yet, an analysis of the facts shows that most research work carried out is driven by two major perspectives: biomedical perspective and geographical perspective. Biomedical perspective work is guided by several disciplines that are:

- Parasitology – aiming to detect Schistosome eggs in faeces and urine to confirm the presence or absence of Schistosomiasis.
- Epidemiology – describing patterns of disease distribution as

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per socio-demographic variables: sex, age, living environment, etc.

- Entomology – examining the life cycles of the disease vector.

Regarding the geographical work perspective, the focus is on natural factors, that is to say how variably, land use, topography, temperature and rainfall influence the increased risk of Schistosomiasis. The solutions proposed by the biomedical and geographic studies, as history shows, have underestimated the habits or customs that constitute the sociocultural and reproductive dimension of endemicity. Such socio cultural dimension observable through socio-behavioural indicators is the subject of this study. Unlike medical and geographical disciplines, this study is part of the anthropological perspective that has focused on human risk factors. It was therefore suggested considering how Schistosomiasis was seen among the diseases that are common locally, human factors underlying the increased risk of the disease and people's attitudes towards the treatment of this endemic disease.

Methodology of Work

Study area

The geographical area concerned is the region of TAABO where is located one of the six hydroelectric dams in Cote d'Ivoire (Ministry of Environment 1996). Observation sites include five locations that are: Ahondo, Bonikro, Léléblé, Taabo village and Tokohiri. These are rural communities located around the large dam of TAABO in central Cote d'Ivoire.

Nature of the study

The study is qualitative in nature. It is guided by the assumption that the perceptions and attitudes of members of the community are factors of increased risk of the endemic Schistosomiasis despite the proven effectiveness of parasitological treatment. These social and cultural considerations underpin the use of social science disciplines including the socio-anthropology. The contribution of the latter is to explain and understand the fundamentals of the reluctance observed. In the context of this social discipline, method of work is determined by two factors: the quality of the respondents and the specificity of observation units.

Survey population

Given the qualitative nature of the study, it was not necessary to determine a statistically-representative sample. It is thus that within each community visited, key informants were identified. They were likely to provide reliable information expected. They included the following:

- The chief and/or some very important people
- Primary school teachers present during our visit
- Community health workers
- A nurse or midwife
- Youth representatives
- Managers of health management committee (COGES)
- Representatives of students' parents
- Women's representatives

Data collection techniques

Regarding data collection, we used three types of techniques. These

are: documentary research method, direct observation of the physical environment, and the group interview to collect the official version of facts according to the community.

Observation units

The facts observed involved the following:

- Ecological, socio-economic and cultural characteristics of the community;
- Epidemiological pattern in the community;
- Existing water points in the area;
- Experience of the community as regards Schistosomiasis.

From these focal points, a series of exchanges brought results

Results

Characteristics of the study area

The area is determined by quite a peculiar ecological environment, a composite socio-cultural environment and a variety of water points.

Ecological and climatic characteristics: TAABO is an area in the southern part of central Côte d'Ivoire, a hinge zone located between the forest in the south and the savannah in central Côte d'Ivoire. It is a landscape characterized by the presence of a chain of hills, lots of areas of shallow water, a tropical climate with a dry season and a rainy season. Local temperature varies between 28°C and 30°C.

Ethno-cultural environment: The ethno-cultural environment remains very mixed. It consists of native peoples, Akan (Baoule, Swamlin, Ngban), Kru (Dida) and many non-native communities, then aliens (Burkinabes, Malians, Nigériens and Mauritanians) hailing from the West African sub-region.

The large dam and water points in terms of hydrology, the area are mainly characterized by the presence of the large dam on the Bandaman river, several lakes and seasonal streams.

These specific ecological, ethno-cultural and hydrological characteristics result in unique implications relating to health.

How is Schistosomiasis seen among the common diseases in the community: In the areas visited, the pathologies regarded as common, appear to be numerous. Among these, the most feared were identified. This socio-sanitary environment is described in (Table 1)

Urinary Schistosomiasis is endemic in the five locations visited. Yet, the group interviews resulted in two significant facts:

- Schistosomiasis is not recognised as a pathological fact in the Baoulé community;
- Schistosomiasis is not considered a serious morbid state because, of course, it is not a disease. Thus, it is not feared in this Baoulé community

Human risk factors of Schistosomiasis in the region: Factors observed in the community's concern water points, human activities and conditions of public health. Items of analysis are shown in (Table 2). SODECI: Company of Water Distribution in Côte d'Ivoire.

Table 2 noted three major items

- There are a multitude of surface water sources in the physical space of the study area

Localities	Common diseases mentioned	Feared diseases among those listed	Reason for fearing the diseases	Comments
Ahondo	Malaria Schistosomiasis Onchocerciasis	Onchocerciasis	Onchocerciasis causes sight loss	Schistosomiasis has been recognised as an endemic disease by all participants in the interview
Bonikro	Malaria Diarrhoea Buruli ulcer	No disease mentioned is feared except when there are complications at an advanced stage	Complications immobilise the patient or lead to death	Schistosomiasis has been reported among common diseases only by teachers present at the meeting
Leleble	Malaria Typhoid fever Buruli ulcer Measles	Typhoid fever	The symptoms of typhoid fever are difficult to distinguish from malaria; besides, treatment takes longer and is expensive	Schistosomiasis is endemic but not listed among the common diseases
Taabo-village	Malaria Buruli ulcer Typhoid fever Schistosomiasis	Typhoid fever	The treatment of typhoid fever is long because of its symptoms that are similar to malaria	Schistosomiasis has been mentioned among the common diseases only by teachers
Tokohiri	Malaria Buruli ulcer Onchocerciasis Rheumatism	Onchocerciasis	Onchocerciasis is feared because it causes sight loss	Schistosomiasis is endemic but it was not listed among the common diseases

Source: 2008 survey

Table 1: Epidemiological pattern of according to the community.

Localities	Drinking water sources	Water points in natural environment	Human activities in natural water points	Health facilities	Latrines
Ahondo	A water tower in a neighbourhood	dam fahasso koukouba	Drink, laundry, dishwashing, swimming, fishing	Presence of a health centre	Presence of some latrines
Bonikro	Two water pumps	Bandama several seasonal water points	Drinking, washing, bathing watering vegetable gardening	Presence of a health centre	No latrines
Leleble	SODECI water supply	dam behifon labâbrouha Doho 1 Doho 2	Drinking, washing, washing dishes, watering crops, swimming and fishing	Presence of a dispensary	No latrines
Taabo-Village	SODECI Water supply	dam Lake backwater	Drinking, washing, washing dishes, swimming fishing, recreation	No health centre	No latrines
Tokohiri	Two water pumps	<i>kimbahongo</i> <i>kpadjagna</i> <i>dogo-n'zuhé</i>	Drinking, washing, washing dishes, watering, bathing	No health centre	No latrines

SODECI: Company of water distribution in Côte d'Ivoire

Table 2: Risk factors relating to exposure to schistosomiasis in the localities.

- A large number of human activities associated with water are carried out in these water sources.
- Absence of latrines in communities is an increased risk factor for contamination of Schistosomiasis in the study area.

Social aetiology according to the community and its attitudes towards treatment: The social experience of the communities as regards this endemic disease is observed through their perception and attitudes.

The cultural communities' perception of Schistosomiasis: This perception is about describing the name, the symptoms and causes. In terms of nosology and symptomatology

Schistosomiasis has two different names in the Baoule Swamlin group that is the dominant group. The terms used for Schistosomiasis are:

- "*Bié-modja/bjemodzæ*", meaning "pee from blood"
- "*Ako-liè /ækəliɛ*", which is equated with "*rooster's venereal disease*".

Reference to these images is due to the presence of blood in the urine. Urine colour remains the major symptom for the group.

The intestinal form of the disease remains unknown. Also, in the imagination of this cultural complex, Schistosomiasis is not considered a serious disease. In this community, any morbidity implying physical disability or any morbidity of a chronic nature is defined as a serious illness- Social aetiology

According to the groups visited, three cases are distinguished due to Schistosomiasis:

- Consumption of contaminated water;
- Pees on the traces of urine of a subject having the disease
- Sexual transmission.

These items indicate explicitly that the real causes of contamination due to Schistosomiasis remain ignored in the communities.

Attitudes vis-à-vis the treatment of Schistosomiasis are observed at TAABO through three social contexts:

- Treatment in the community through traditional African medicine; this treatment is performed by traditional healers. This is by and large the starting point of a series of types of therapy. The use of medicinal plants in the form of decoction is involved. Plant leaves, bark, roots or fruit are used. Both men

and women are subject to this type of African medicine; adults, young people as well as children are all subject to the same treatment.

- Parasitological treatment at school; target population regarding praziquantel-based treatment at school is meant for all six to thirteen year-old primary school children. This population segment is the most affected by Schistosomiasis in the aforesaid areas. Tablets are sold CFAF100.00 (about 0.20 USD) each to school children by school teachers officially assigned thereto. Some difficulties are observed, albeit this ridiculous price. As a matter of fact, some parents appear to be reluctant to give their offspring the one hundred francs for their treatment. To them, the drug should be absolutely free of charge.
- The parasitological treatment in the community: target social groups in this context are mainly young people and adults living in the community. This is actually a community-based distribution where a Community Health Officer (ASC) is the key interface. For contaminated subjects, access to praziquantel-based treatment is subject to payment of a paltry amount of two hundred (200.00) CFAF. Again, reluctance appears clearly visible through arithmetical demonstrations of household heads. They clearly indicate that the larger the household, the higher the cost of treatment. This fact becomes for a considerable number of households a deterrent to parasitological treatment. Moreover, according to this same population, parasitological treatment does not seem to be quite effective to the extent that many cases of recurrence are experienced in the group.

After all, as one can see, disruption of the disease transmission chain is not obvious at the present stage. To be honest, only the biomedical sciences through epidemiology, parasitology and pharmacology cannot put an end to this public health issue caused by Schistosomiasis. The nature of this issue is not only of biological dimension. Through water-related lifestyle, social perceptions of the disease and attitudes towards treatment methods, a socio-cultural dimension is to be taken into account. How can one justify this reflection perspective?

Discussion

At this stage of the process, it is all about showing how and why it appears necessary for social sciences to be instrumental in controlling, together with biomedical sciences, Schistosomiasis defined as an endemic disease. Such multidisciplinary approach is determined by three major findings that are: tradition involving rapport with water, social perception concerning Schistosomiasis and perception of treatment.

Tradition involving rapport with water

The tradition concerning the rapport with water is the starting point. Indeed, the cultural community in question in this context is the Baoule subgroup called "Swamlin". Geographically settled around the large dam, this group has historically developed a tradition in its rapport with Bandama river. The existence of small surface water points in any season of the year in the area has, of course, strengthened this tradition of rapport with water. This is accounted for in Table 2.

- The presence of all kinds of human activities in various natural water points, including washing, washing dishes, bathing, watering crops, fishing and recreation;
- Access to various water points by all social strata, men and

women, adults, youth and children at any time and without conditions.

This data set cause's increased risk factors that help spread Schistosomiasis, especially as hygiene conditions are insecure because of the lack of latrines in the communities. For the *Swamlin* community, the river and its immediate environment are a sociological framework that defines itself as a continuation of the village site, regardless of the distance separating the two areas. This same finding is seen in the works of [5] that argue that the distance to permanent water courses was one of the most significant variables for predicting the increased risk of the disease. Water in nature is an area with many social and cultural functions. It is seen as:

- An area for relations and trade (taking community baths in the evening by adults);
- An area for gender education (young girls learning how to do washing and washing up under the supervision of their mothers);
- An area for learning and assertiveness (swims and swimming competitions for young people);
- An area for leisure and eroticism (place for seduction among adolescents);
- An access route to workplace for farmers (crossing for farm work)

In this way, the water points involved, depending on days and seasons, a relatively large proportion, time for various members of the community (men, women, adults, young people and children) in their various activities (farming, recreation, sexuality, education, etc.).

Consequently, these sources being recognized as the bases for the spread of the disease, the logical question that arises is how to minimize contact with the waters from the natural environment, while reducing the risk of contamination. This is the first issue which falls within the competence of social sciences.

The illness representation system

Schistosomiasis known as "bié-modja" is represented in the Swamlin community through a belief system completely separate from classical epidemiology [6]. This belief system has a causal diagram but unrelated to the epidemiological sense. This finding is revealed by the data in Table 1.

- Of the five communities visited, only that of AHONDO recognised as Schistosomiasis is a common disease in the population. Only teachers, having different cultural origin, and present in different interview groups drew attention to the endemic nature of this disease.
- In none of the five communities surveyed, Schistosomiasis was listed as critical illness, even at AHONDO where it was regarded by the population as a significant endemic disease.

These observations lead us to highlight another reason for involvement of anthropology in the control of the endemic Schistosomiasis. Indeed, the system of representation in these Baoule communities is wrong. In fact, Schistosomiasis is certainly identified as a disease. But it is not recognised as a serious disease. This perception stems from the fact that this condition does not lead to apparent disability on a short-term basis in the eyes of the members of these communities. This finding is the same made by WARDA (1999) stating

that Schistosomiasis is simply not perceived as a threat to life or even a debilitating disease. This is because many infected people do not suffer unduly. Yet, the serious medical consequences of Schistosomiasis are real. "In case of repeated reinfection causing intense parasitism, one sees a hepato-intestinal syndrome. It is a chronic and severe form where diarrhoea is coupled with a large liver (hepatomegaly), ascites, splenomegaly (enlarged spleen), severe anaemia and weight loss" [7]. These physiological implications remain simply ignored by the cultural groups visited.

Treatment perception

The field survey revealed that the "Swamlin" community is aware of the limitations of parasitological treatment of Schistosomiasis as an endemic disease. The treatment is based on Praziquantel. However, this concept of limits needs to be explained.

- To these communities, the concept of limits appears to amount to "inefficiency", and in this respect, Praziquantel is comparable to placebo [8]. Its effect would only be that of a psychological nature since the same patient may have several episodes of the disease during the same year.
- According to the medical model, the concept of limits would mean "necessary but not sufficient".

This leads us to understand that besides Praziquantel, it is important to adopt good health behaviour regarding human wastes (urine and faeces). Such wastes ought to be dumped in protected areas (latrines) but not in surface waters available to the public.

Indeed, one needs to state that a recurrent symptom of Schistosomiasis in some patients despite treatment with praziquantel does not amount to the drug being ineffective [9]. It is rather due to the risk behaviour (contact with contaminated water points) that exposes these subjects permanently. 'Schistosomiasis would be extinct if a contaminated subject took the habit of urinating and going to toilet away from water points' [10]. One must say that healing the body appears necessary but not enough, since human behaviour ought to be healed at the same time. Only social sciences concerned with this behavioural dimension, will be able to achieve this goal. This is the only way the overall community health project can be effective. In other words, the scope of this community health is defined as a multidisciplinary framework. Skills sought in this area include biomedical sciences, socio-anthropology and communication sciences.

Conclusion

It appears from the analysis of the facts that not only is

Schistosomiasis endemicity due to epidemiological and geographical factors, but also to a human factor that appears decisive. The experience of the Taabo area has shown that the Baoule *swamlin* cultural communities do not consider Schistosomiasis a disease. No fear in this respect. Indeed, the risk of contamination is further compounded by the fact that most agricultural, domestic and recreational activities are related to surface water, while at the same time, latrines are almost non-existent in the localities. To this is added the parasitological treatment considered ineffective by the people. This set of human factors related to lifestyle, perceptions and social behaviour leads us to think that anthropology appears as an essential discipline in the control of the endemic Schistosomiasis in Taabo region.

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