Gender, Health, and Sustainable Development

Proceedings of a Workshop held in Nairobi, Kenya, 5–8 October 1993

Edited by
Pandu Wijeyaratne,
Lori Jones Arsenault,
Janet Hatcher Roberts, and
Jennifer Kitts
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Gender Issues in the Control and Prevention of Malaria and Urinary Schistosomiasis in Endemic Foci in Cameroon

Stella Anyangwe, Olayinka Njikam, Lisette Kouemeni, Pascal Awa1 and Emmanuel Wansi*

Introduction

Malaria and schistosomiasis are respectively the first and second most important diseases in tropical and sub-tropical countries, with respect to the number of people they affect and to their socio-economic and medical consequences (WHO 1991). Both diseases can be considered diseases of poverty, since they affect people who live and work in unsanitary surroundings that favour disease transmission, or else who cannot afford preventive and curative measures (Reubin 1992).

Women are not considered genetically more predisposed to malaria and schistosomiasis than men. However, the gender roles of women, determined by the social and cultural beliefs and values of different tribes and ethnic groups, put them in greater contact with disease transmission sites (Agyepong 1992; Michelson 1992; Reubin 1992).

The need for gender-specific research in tropical diseases, especially the use of qualitative and quantitative methods by multi-disciplinary teams of biomedical and sociological researchers, to find out about the socio-cultural determinants of diseases, has been emphasized in recent years (WHO 1991; Aaby 1992; Khan and Manderson 1992; Manderson 1992). In Cameroon, where malaria and schistosomiasis are endemic in several regions, many studies on these diseases have stratified their prevalence by sex (Moyou 1984; Anyangwe 1990; Ratard 1990), but very few have studied gender-related roles as a determinant in disease prevalence (Sama 1990).

This paper describes the results of two studies carried out by multi-disciplinary research teams, both studies using rapid assessment methods to determine the gender-related factors associated with urinary schistosomiasis (in 1992) and malaria (in 1993). The purpose of both studies was to determine whether social, cultural and economic factors in the study areas put women at greater risk than men of acquiring the diseases. The generic term "women" includes female children.

Study Areas

Kotto Barombi, where the 1992 schistosomiasis study was carried out, is a volcanic island in a crater lake in the equatorial rain forest region of south-west Cameroon. It is

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about 40 kilometres from the nearest town. There is a rainy season and a dry season, each lasting about six months. It has been a known holo-endemic focus for urinary schistosomiasis since the early part of this century (Wright 1978). The prevalence of schistosomiasis there has been known to reach 75% of the population, and females were said to have higher prevalence than males (Moyou 1984). The population of the island is about 500, while about 1200 people inhabit a mainland village on one shore of the lake. Females outnumber males on the island (53% and 47% respectively). On the island, there is neither pipe-borne water nor wells. All drinking water is fetched from the mainland, and water for all other domestic chores is obtained from the lake. Fishing and farming are the predominant occupations, and all farming is done on the mainland. The only means of transportation to and from the island is by canoe, although children take delight in swimming across the 400 metre distance in the hot, dry season. The village school, market and health centre are on the mainland. Our study took place between April and July 1992, just before the rainy season.

Simbok, where the 1993 malaria study was done, is a rural village located about 8 kilometres from the capital, Yaounde, in the equatorial rain forest zone of the Centre province of Cameroon. It is in the meso-endemic belt for malaria, and has a population of about 900, 57% of whom are female. Many of the village males work in the capital city. Farming is the predominant occupation. The village has no pipe-borne water, no health care facility, no school and no market. The village children attend school in the nearest district, about 4 kilometres away. Simbok is partially surrounded by expanses of marshland and lush forest. There are four seasons: a long and a short rainy season, and a long and a short dry season. No studies on malaria, or anything else, have been done in the locality. On investigation, the villagers say malaria is their biggest problem, and state that many children have died of the illness before getting to hospital. Our study took place between April and May, 1993, just before the short rainy season.

Research Methods

The methods used were a variety of socio-anthropologically proven rapid assessment procedures (RAP) that generate a lot of information for the formulation of hypotheses within a relatively short time frame. These methods are increasingly being used in epidemiologic research on tropical diseases (Scrimshaw and Hurtado 1987; Manderson and Aaby 1992).

For the schistosomiasis study, the methods used were participant and non-participant observation; focus group discussions (FGD); informal interviews with key informants in the community; a semi-structured questionnaire survey of a sample of the population. Two research assistants stayed in the village for two months. The other members of the research team were a physician/epidemiologist, an anthropologist and a parasitologist. Sixteen FGD were carried out with males and females of the following age groups: 6-9, 10-14, 15-19, 20-44, 45 and more years, on both island and mainland.
For the malaria study, the methods used were informal interviews with key informants; 1 FGD with each of the following groups: pregnant women, mothers of children aged 0-4 years, mothers of children aged 10-14 years, male heads of households, and children aged 10-14 years; 30 in-depth interviews; 10 case histories in homes where someone had suffered from malaria in the past month. In this study, the qualitative methods were validated by a cross-sectional knowledge, attitudes and practices (KAP) survey of a systematic sample of inhabitants aged 10 years and above in 30% of the households in the village. The survey instrument was a structured, pre-coded and pre-tested questionnaire. The research team was comprised of two physicians/epidemiologists, a sociologist and four research assistants.

For both studies, a household census was done and baseline disease prevalence ascertained at the onset. The results of the census and prevalence studies were analyzed using EPIINFO, while the RAP results were analyzed manually, using content analysis.

Results

Baseline Prevalence

The prevalence of schistosomiasis in Kotto island was 51%, and 40% on the mainland. On both the island and the mainland, males had a slightly higher prevalence than females. However, on both island and mainland, but especially on the island, females excreted a significantly greater number of eggs than males (12,660 and 8,328, respectively). The egg burden on the mainland was negligible, and so our study focused mainly on the island.

The overall prevalence of malaria in Simbok was 30%, and there was little difference between males and females, but plasmodium counts were much higher in females than in males.

Women’s Gender-Specific Roles and Risk of Schistosomiasis

In Kotto Barombi, adult women and girls are traditionally responsible for washing utensils, laundry, fetching water for household use, and lake-side fishing, all activities that require constant and prolonged contact with the infested lake. Utensils and clothes are washed on the shores of the lake, where water is also fetched for household cleaning, cooking and sometimes bathing. Basket-fishing is a female occupation, and consists of women wading a few metres into the lake and positioning their fishing baskets under rocks from where they catch small fish and shrimps. They can spend from six to ten hours on any one fishing expedition, waist-deep in the lake, and during which time they urinate and defecate in the lake as the need arises. Females, young and old, usually carry out their activities in groups, transforming their mundane tasks into times for social entertainment and information sharing. They are therefore usually in no hurry to leave the lakeshores.
Mothers of infants and young children take them to the lake and while working, either keep them strapped to the back, or let them play alone or with older siblings on the shores. These children are also bathed in the lake or with lake water at home.

Males fish from canoes in the middle of the lake. Both sexes farm food and cash crops on the mainland. Female children start their gender-defined roles as early as the age of three years when they can walk unaided to the lake to fetch water or to wash. While females are duty-bound to be in contact with the lake during much of the day, male children are in it most of the time for recreational swimming, especially in the dry season.

Females in Kotto are therefore, by virtue of the traditional and culturally-prescribed gender roles and water contact patterns, more often exposed to urinary schistosomiasis, which they also help propagate by promiscuous urinating and defecating in the lake.

**Women’s Gender-Specific Roles and Risk of Malaria**

In Simbok, gender-specific roles for women are just as clearly defined as they are in Kotto. Women and men farm the land, but men specialize in cash crop farming (coffee, palmwine, firewood) while women are mostly food crop farmers, predominantly groundnuts and maize which are planted several times during the year. The food farms need more constant weeding and harvesting, exposing the women to mosquitoes more often. There is no market in the village and it is an unwritten law that foodstuffs are not sold within the village to fellow villagers. Each family therefore has a food farm that is the responsibility of the women in the family. Although most women wear trousers to farm, their arms, feet and faces are rarely protected. Harvesting of maize is usually done before dawn so that the crops are taken to markets in the capital by women at dawn.

Laundry and fetching water are predominantly female chores, both of which are done either at the springs or river that flow through parts of the village. We found mosquito larvae even in the drinking water portion said to be the "cleanest" part of one such spring.

**Women’s Perception of Causes and Transmission of Disease**

In both study sites, women had adequate knowledge about how schistosomiasis and malaria are contracted, and in each site, the disease under study was cited as either the most important or the second most important disease affecting the community. In Kotto, "bilharzia", as the disease is called by all for lack of a name in the local language, is believed to be contracted when people spend long periods of time in the lake, where they also urinate and defecate. However, there were serious misconceptions, among young and old, educated and non-educated females alike, about how schistosomiasis entered the human body. They thought that the "worms" that cause schistosomiasis enter the human body through the urethra or anus, during urination or defecation in the lake. All age groups also
affirmed that throwing household garbage in the lake produced those "worms", and although they all had seen small snails on vegetation on the banks of the lake, no one knew what part these snails played in the transmission of schistosomiasis.

On the other hand, in Simbok, malaria is called tir miki in the local dialect, translated as "the meat of blood", and explained to mean "the animal that feeds on blood". Most women, young and old, educated or not, believed malaria to be caused by mosquito bites, although some did not know from where the infective agent in the mosquito came. Some also added other causes like heavy rains, walking for a long time under the sun and catching a cold.

Women's Perception of Severity and Complications of the Diseases

For schistosomiasis, female children and adults believed that the disease can cause anemia, emaciation and even stunting when chronic, but did not think the disease could kill. Adult women, including primary school teachers and traditional birth attendants, believed that chronic schistosomiasis led to infertility, but stated that the disease had no negative influence on either sexual desire or on intercourse. All age groups affirmed that the disease had no negative effect on manual work or on academic performance in school.

For malaria, most children and adult women believed that malaria can kill a child under 5 years of age, and cited malaria as the most severe disease in children. Adult women, especially mothers of children, were categorical that malaria does cause abortions.

Women's Treatment-Seeking Behaviour

Women believed both diseases to be treatable. In Kotto, there is no traditional medication for schistosomiasis, and prior to our study, praziquantel was the drug other researchers had treated infected villagers with, free of charge. The drug was also available in the village health centre, at a price of US$3 per tablet ($12 per adult dose), which any villager could hardly afford. This meant that almost no one got treated for their infection. Most children stated that their mothers were the parents they first told about their infection, if they told anyone at all. Otherwise, mothers would only discover the infection if they noticed blood on the children’s clothing or bed. Nonetheless, mothers still had to ask fathers for money and permission to take themselves or their children to the health centre if they deemed the infection serious enough to require treatment. Money is so seldom available that some mothers have tried native concoctions which they claimed alleviated the symptoms of the disease. In our study, we freely treated all infected persons with a single dose of metrifonate, which on our advice has been put on the list of essential drugs in the health centre, at a cost of about US $1.50 per adult dose.

In Simbok, as in Kotto, fathers make the decision about when to go to a health care facility for treatment. Malaria was most often diagnosed by mothers who, initially, tried traditional remedies like herbal infusions or a vapour bath over a boiling pot. They then
usually proceeded to administer often inadequate doses of various anti-malaria medications, especially chloroquine and aspirin, which they purchased without prescriptions. If the fever subsided, even after a single dose of medication, most mothers stopped giving the treatment. They informed the fathers about the malaria when their initial treatment had not seemed to work, or when complications like convulsions set in. Parents, especially, mothers, usually bought their medications from street hawkers, or in grocery stores, because they complained about the lengthy periods spent in hospitals and health centres, just waiting to consult for diseases as common and as recurrent as malaria.

**Women’s Proposals for Control and Prevention of Disease**

At present, the women in Kotto do not do much to protect themselves or the community from urinary schistosomiasis. Due to the fact that their gender roles put them in constant and prolonged contact with the infested lake, they get recurrent or chronic infections which they can hardly afford to treat, thereby increasing the risk of perennial contamination from the lake. Adult women propose that periodic chemical mollusciciding of the lake, even it means killing some fish, and provision of low-cost oral medication for treatment of the infection, would be the most effective and appreciated method of controlling the disease in their community. They also propose that pipe-borne water be installed on the island, and that there should be official prohibition by law, backed by fines for defaulters, of bathing, urinating and defecating in the lake. Children advocate that the state (health centres and hospitals) treat all infected children free of charge at all times.

Protection against malaria in Simbok is presently done in the most archaic way imaginable. Adult women and children alike say that the most usual method of keeping mosquitoes away is by waving them off! Some say that they burn sugar cane chaff at night, while a few sporadically buy mosquito coils or insecticides. Most of the children know that bushes around the houses should be cleared and water-retaining containers drained. However, few of them do this since they are not asked to do so by their parents. Adults complain about the cost of insecticides, mosquito nets and malaria treatment. Their proposal is for government teams to continue spraying their houses and farms with insecticide, a practice that was abandoned several years ago.

**Conclusion**

These two studies have clearly demonstrated that there are close links between women’s gender roles and their susceptibility to chronic or recurrent ill health from urinary schistosomiasis and malaria. The studies have also highlighted the fact that a woman’s health depends as much on her as on external factors, an important one being a man’s decisions on financial matters. The limited educational level of women does not seem to greatly affect their knowledge about these diseases. Their treatment-seeking behaviour has more to do with lack of financial resources than with lack of will or knowledge to seek treatment. Constant and repetitive health educational sessions on preventive and curative measures should be emphasized in primary schools and in the community for the benefit of mothers. Control
programs should target women in particular, and should include culturally-appropriate measures to ensure that women are empowered educationally and financially. Without these, schistosomiasis and malaria might still be highly prevalent diseases of poor women well into the 21st century.

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Please note that the discussion notes from Dr. Stella Anyangwe’s presentation can be found at the end of Dr. Uche Amazigo’s presentation.