LOCAL DISEASE PERCEPTION AND TREATMENT OF ONCHOCERCIASIS IN UZO-UWANI LOCAL GOVERNMENT AREA, ENUGU STATE, NIGERIA

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ABSTRACT

Local disease perception and treatment of onchocerciasis were studied in Uzo-Uwani Local Government Area of Enugu State, Nigeria. The objectives of the study were to ascertain the level of understanding of the aetiology of onchocerciasis and the management of the disease in the area. Different sampling methods including cluster sampling and random sampling were used in the selection of the sample units. Data collection methods included the use of questionnaires and interviews. From the study, it was found that the people of the area are aware of the presence and nuisance value of Simulium flies, commonly called the blackly, but do not associate the bite with the manifestations of onchocerciasis which are common in their communities. It was discovered that ignorance was at the root of many problems associated with Onchocerca volvulus disease such as discrimination against people with oncho-rashes, lack of proper treatment of the disease and abuse of the choice drug for treatment of onchocerciasis (ivermectin). Poverty is also a contributory factor to lack of adequate treatment of the disease in the area. The result also showed that nodulectomy is a common and accepted treatment method in the area for Onchocerca nodule. On the basis of the result, it is recommended that enlightenment programme is needed in the area together with a campaign for nodulectomy. In the enlightenment programme, use should be made of Community Directed Distributors already trained by World Health Organization (WHO) for the distribution of ivermectin under the African Programme for Onchocerciasis Control (APOC).

Key words: Onchocerciasis, *Onchocerca volvulus, Simulium*, disease perception, treatment, Uzo-Uwani.

INTRODUCTION

Human onchocerciasis, commonly called 'River blindness' is usually a chronic parasitic disease caused by the filarial nematode, *Onchocerca volvulus*. Onchocerciasis is essentially a focal disease within its endemic areas with new foci still being discovered in remote places (WHO, 1997). It is a disease of warm tropical environment in which the flies that transmit it live under conditions favourable for their development all year round (Crosskey, 1990). The impact of the disease in social, economic and cultural terms in Nigeria has been shown to be enormous as it affects the productivity, social life and sexual life of the sufferer due to blindness or other debilitating effects (Nwoke, 1990). According to him, the socio-economic and cultural disabilities associated with human onchocerciasis in the devastated endemic communities in West Africa are damaging especially among the farming population, which produce the bulk of our food and industrial raw materials.

Nwoke *et al.* (1992) are of the opinion that the assessment of local disease perception and treatment in any onchocerciasis endemic area is significant in effective planning and mobilization of communities for control programmes and in ascertaining whether local treatment is of any chemotherapeutic potential.

Few studies have been carried out on the local disease perception and treatment of onchocerciasis in different parts of Nigeria. Nwoke *et al.* (1992) for example, assessed the local disease perception and treatment in Jos, Plateau State. In northwestern Nigeria, Edungbola (1982) carried out similar studies in Ile-Ire district of Kwara State; Edungbola *et al* (1983) and Edungbola and Asaolu (1984) did similar works in Babana district of Kwara State. In the east, Amazigo and Obikeze (1991) carried out a similar study in Ette in the northern fringes of Enugu State. The Pan African study

group on onchocercal skin disease worked in Awka and Nike among others (WHO,1995).

Edungbola (1982) reported that the natives of Ile-Ire district of Kwara State were aware of the nuisance of the blackfly locally called "Amukuru" and knew onchocerciasis locally called "Inaru" but were not aware of the association between them. They attributed onchocerciasis manifestations to old age, familial traits or enemies. The treatment is, therefore, misdirected towards appeasing enemies or devils.

Edungbola *et al.* (1983) and Edungbola and Asaolu (1984) reported that although most subjects of Babana district of Kwara State were aware of the blackfly locally called "Kusena", they were ignorant of its association with the various manifestations of onchocerciasis. For this reason, no attempts were made by the subjects to seek appropriate remedy, as reflected in the finding that all the infected individuals interviewed, except two teachers, had never been treated for onchocercal infection.

Nwoke *et al.* (1992) studied local disease perception in Jos area and found out that villages in endemic communities were aware of the menace of the blackflies, locally called "Bekin Kuda", because of the bite and accompanying intense itching especially during the farming season. However, they were not aware of any association between the blackfly bites and onchocerciasis. They attributed the manifestations to various causes including old age, familial traits, affliction from enemies or the gods. As a result, majority did not attend hospitals but consulted oracles and appeased gods for help.

At Ette, Amazigo and Obikeze, (1991) reported that the villagers knew the blackfly locally called "Ita" but had no knowledge of its association with the manifestations of onchocerciasis, which they attributed to other causes. They treated the disease with local herbs.

In the present study, the local disease perception and treatment of onchocerciasis were investigated in the 16 communities that make up Uzo-Uwani Local Government Area of Enugu State, based on a previous report of the presence of onchocerciasis in part of the area (Amazigo *et al.*, 1993). The objectives of the study were to ascertain whether the farming communities associate the disease with *Simulium* flies and to determine how, if at all, they treat it. This, it was hoped, would help in recommending appropriate intervention strategies to help these agricultural communities.

MATERIALS AND METHODS

The Study Area and Study Population: The study area was Uzo-Uwani Local Government Area of Enugu State (Figure 1) which, belongs to the forest-savanna mosaic zone of Nigeria (Crosskey, 1981). It lies between longitude 6^0 $30^/$ and 7^0 $00^/$ East and between 6^0 $55^/$ and 7^0 $15^/$ North. The area is traversed by many rivers and streams, which belong to the Anambra river system identified by Crosskey (1981) to be part of the breeding sites for *Simulium damnosum* in Eastern Nigeria. Most of these rivers are clean and rapidly flowing, which encourage the breeding of *Simulium* in these rivers. Uzo-Uwani Local Government Area consists of 16 communities divided into four health districts namely:

i. Umulokpa district consisting of Umulokpa (headquarters), Nkume, Adaba and Ukpata
ii Nkpologu district made up of Nkpologu, Uvuru and Akpugo
iii Ogboli district consisting of Adani, Asaba, Igga, Ojjor and Ogurugu
iv Nimbo district comprising Nimbo, Abbi, Ugbene-Ajima and Nrobo.

Uzo-Uwani Local Government Area is inhabited by two ethnic groups namely the Ibos and the Igallas but the latter are in the minority being part of only three communities (Igga, Ojjor and Ogurugu). The inhabitants of all the communities that make up this local government area engage in agriculture as their major economic activity, cultivating mainly yams, cassava, maize and rice. The level of engagement in farming activities in the area is so high that almost every adult, including the civil servants, are involved. The study population comprises the inhabitants of the 16 communities that make up the local government area.

The Study Sample and Sampling Procedure: The study sample consists of 1958 randomly selected primary school pupils, secondary school students and adults from the sixteen communities that make up the local government area (Table 1). Different sampling methods were used in the selection of the sample. This included purposive sampling, cluster sampling and random sampling methods (Eboh, 1998). Uzo-Uwani Local Government Area was purposively selected for the study

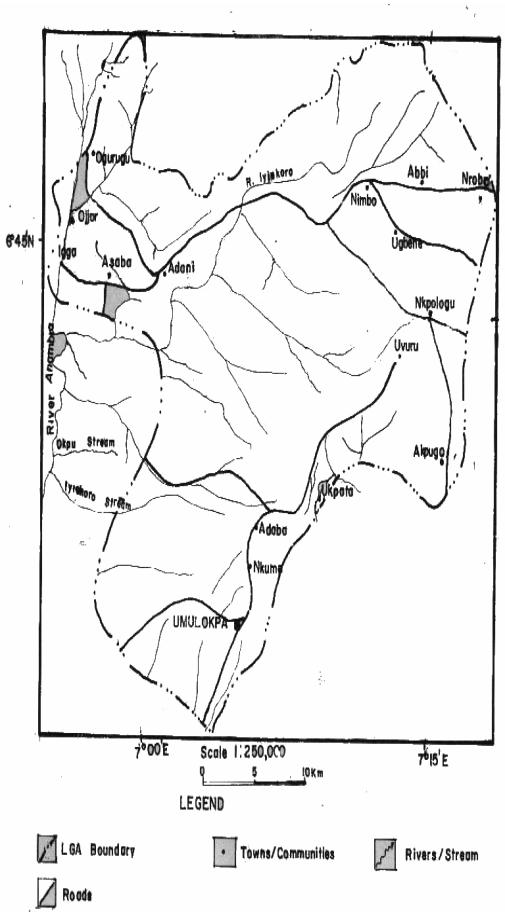

Fig. 1: Map of Uzo-Uwani Local

Table 1: Respondents according to study group and sex

Group	*M*	*F*	*Total*
Primary School Population	469	383	852
Secondary School Population	273	206	479
Adult Population	430	197	627
Total	**1172**	**786**	**1958**

because of previous knowledge of the presence of onchocerciasis in the area (Amazigo *et al*., 1993). The subjects were selected in clusters – the primary school pupils, the secondary school students and the adults of the individual communities. Within each cluster, subjects were randomly selected.

Data Collection: A structured and pre-tested questionnaire was administered to the selected secondary school students in face to face encounters. The questionnaire schedule was also used as a guide to interview the primary school pupils, some indigenous teachers and some adults of each community to find out their knowledge and beliefs about onchocerciasis including the vector (blackfly) and various visible manifestations of the disease and local treatment methods for these manifestations.

Data Analysis: In each community during the interview, the majority opinion was taken as representing the opinion of the community. The questionnaires were coded and analysed using percentages and the answer with the highest percentage in each question was accepted as majority opinion.

RESULTS

Knowledge of the blackfly and the various manifestations of onchocerciasis as well as treatment methods are presented for different health districts in Uzo-Uwani Local Government Area (Table 2). Although there were similar knowledge and beliefs in most communities, some communities had their own peculiar beliefs. Respondents in all communities knew the blackfly and the various manifestations of the disease, which each community called different names. However, the extent of knowledge varied from one community to another depending on how common the blackfly and the disease manifestations were in that community (Table 2). It was, however, observed that communities in the same health district had similar names for both the blackfly and the various manifestations (Table 3) and their beliefs about these were also closely related.

The people generally believe that the blackfly bites mostly in the mornings and evenings especially around farms, bushes and rivers/ streams, bites everybody and on all exposed parts of the body. However, they do not associate the bites with any of the manifestations of onchocerciasis such as oncho-rashes, palpable nodules and Leopard Skin. They do not also have universal method of preventing the bites of the blackfly, although few people use palm oil as repellent, some use smoke while others use plant branches to drive them away.

There was a general belief, among the youth, that oncho-rashes are caused by dirty habits and can be passed from one person to another either by direct contact or through common use of personal materials such as towels, bedding, clothes e.t.c. They also believe that these rashes can be prevented by avoiding such contacts. Some elders, on the other hand, believe that oncho-rashes result from nodules and are not contagious. Treatment methods were more or less similar e.g. oncho-

Table 2: Abundance of blackflies in relation to its knowledge and manifestation of onchocerciasis in the communities especially among the youth

Community	Abundance of blackfly from community response	Knowledge by youth	Manifestation of disease in youth
Umulokpa District			
Umulokpa	Abundant	Known	Present
Nkume	Abundant	Known	Present
Adaba	Abundant	Known	Present
Ukpata	Abundant	Known	Present
Nkpologu District			
Nkpologu	Abundant	Known	Present
Uvuru	Abundant	Known	Present
Akpugo	Abundant	Known	Present
Ogboli District			
Adani	Abundant	Known	Present
Asaba	Not Abundant	Not Known	Absent
Igga	Abundant	Known	Present
Ojjor	Abundant	Known	Present
Ogurugu	Abundant	Known	Present
Nimbo District			
Nimbo	Not Abundant	Known	Present
Abbi	Not Abundant	Known	Present
Ugbene-Ajima	Not Abundant	Known	Present
Nrobo	Not Abundant	Not Known	Absent

Table 3: Names of blackfly and manifestations of onchocerciasis in Uzo-Uwani local Government Area

S/No	Community	Blackfly	Rashes	Nodules	Leopard skin
A	**Umulokpa District**				
1	Umulokpa	Nta oji	Iti	Akpurukpu	Ukpo ocha
2	Nkume	Nta ipo	Iti	Akpurukpu	Ukpo ukwu
3	Adaba	Nta	Iti	Akpurukpu	Ukpo ocha
4	Ukpata	Nta	Etu	Akpurukpu	Ukpo ukwu
B	**Nkpologu District**				
5	Nkpologu	Nta	Etu	Akpu	Akpaala
6	Uvuru	Nta	Akpu	Akpurukpu	Akpaala
7	Akpugo	Nta	Korugaba	Akpurukpu	Nchaba ukwu
C	**Ogboli District**				
8	Adani	Nta nkwuisi	Akpu	Akpurukpu	Akpaala
9	Asaba	Ijiji ndi Fulani	Iti	Akpu	Akpaala
10	Igga	Ita\ Ijiji ndi Fulani	Etiri	Okpo	Akpaala
11	Ojjor	Ijiji ndi Fulani	Etiri	Okpo	Akpaala
12	Ogurugu	Ita oloko	Ifoo\Kachuabeg	Okpo	Akpaala
D	**Nimbo District**				
13	Nimbo	Nta akpurike	Akpu	Akpurukpu	Akpaala
14	Abbi	Nta akpurike	Akpu	Mkpo	Akpaala
15	Ugbene-Ajima	Nta akpurike	Etu	Akpu	Akpaala
16	Nrobo	Nta akpurike	Etu	Akpu	Akpaala

rashes were commonly treated with herbs while *Onchocerca* nodules were commonly treated by removal.

DISCUSSION

The studies on the local disease perception and treatment reveal a high level of ignorance of the aetiology of onchocerciasis in the 16 communities that make up Uzo-Uwani Local

Government Area of Enugu State, Nigeria. All these communities are aware of the presence of the blackfly and its nuisance in terms of its bites but they are not aware that the bites are associated with any disease. Consequently, there is no serious effort to prevent them from biting. It was also obvious that the blackfly is not equally abundant in all the communities and that the level of the knowledge of the blackfly in a community, especially among the younger members of the community is closely related to its abundance in that community, for example, the two communities where the primary and/or secondary school children did not know the blackfly (Asaba and Nrobo) were among the communities in which their elders accepted that the *Simulium* flies are not abundant. When compared with studies on the prevalence of onchocerciasis (Ubachukwu, 2001), it was noted that the abundance of the blackflies (from the responses) in a given community correlates, largely, with the prevalence of onchocerciasis in that community. The communities where the blackfly was claimed not to be abundant and not well known, at least among the younger members of the communities, had the least manifestations of the disease especially among the youth, for example, at Asaba and Nrobo. The fact that the blackfly bites everybody implies that in every community where *Simulium* flies exist and especially where they are abundant, everybody is at the risk of infection with *Onchocerca volvulus*. Again, the fact that the blackfly bites on all exposed parts of the body means that the larger the area of the body exposed, the higher the man-fly contact and so the greater the risk of getting *Onchocerca volvulus* infection.

Every community in Uzo-Uwani Local Government Area knows papular onchodermatitis (oncho-rashes) called various names in different communities. It was observed that the communities in the same health district tend to use similar names to describe these manifestations. Except in a few communities whose elders believe that these rashes result from the presence of nodules, majority of the people of Uzo-Uwani Local Government Area attribute onchodermatitis to various causes such as dirty habits or poor hygiene, inheritance, etc while many do not have any idea or opinion about the cause. Because of this erroneous belief, most people of this area think that onchodermatitis can be passed from one person to another through either direct body contact or through common use of personal materials such as towels, bed sheets, clothes, etc. They wrongly believe also that it can be prevented by avoiding contact with infected persons. These wrong beliefs are at the root of the discrimination practiced against people with onchodermatitis in many of these communities (Ubachukwu, 2001). The people believe onchodermatitis can be cured either by use of local herbs, medicated soaps or drugs but they have no idea of the drugs used for its treatment.

The *Onchocerca* nodule is also generally known in Uzo-Uwani Local Government Area and called by various names in different communities. The cause of the nodule as well as any means of its prevention is not known by the communities. The general curative measure for the *Onchocerca* nodule in Uzo-Uwani Local Government Area is removal of the nodule (nodulectomy). This is done either by local excisors or by medical personnel in health posts, health centres or government hospitals. According to the people interviewed, what determines where one goes for treatment of nodule or oncho-rashes is the amount of money available to the person. Most members of the communities know that private hospitals may give better medical care but they cannot afford the cost of treatment. As a result, they go to either local excisors, patent medicine dealers or health centres for treatment. The people do not however, know any drug used in the treatment of *Onchocerca* nodule.

Although leopard skin is common in all the communities studied, no community studied knows of any connection between such a manifestation and any other manifestation of onchocerciasis. They attribute leopard skin to old age or inheritance. Apart form itching, leopard skin is not a source of problem in the communities. It does not hinder them from doing their normal duties neither is it an object of discrimination.

As mentioned earlier, ignorance is at the root of most of the beliefs concerning the manifestations of onchocerciasis. Another area of ignorance is in the treatment of these manifestations. In Uzo-Uwani Local Government Area, it is not generally believed that the manifestations are caused by gods or enemies and so people do not resort to appeasing gods and enemies as reported by Edungbola (1982); Edungbola *et al.* (1983), Edungbola and Asaolu (1984) and Nwoke *et al.* (1992). Yet, due to ignorance of the aetiology of onchocerciasis, people with such manifestations do not take the right treatment for their infection. In Uzo-Uwani Local

Government Area, as well as other endemic areas in the nation, the Ministry of Health in collaboration with World Health Organization (WHO) and non-governmental Development Organizations (NGDO), have been distributing ivermectin (Mectizan) since 1996 under the Community Directed Distribution (CDD) Programme of African Programme for Onchocerciasis Control (APOC) (WHO, 1996). Inspite of this programme, most people of this local government area, apart from few teachers, health officers and the Community Directed Distributors, have no idea of any drug used for treating onchocerciasis. Even those taking ivermectin do not know the disease for which they are taking the drug. Although ivermectin is supposed to be taken for about 10 years without break, many people in this area refused to take it after the first experience because of some observed side effects. As far as such people are concerned, the drug causes disease. They feel more at home with the manifestations of onchocerciasis than with the side effects resulting from the treatment. The side effects are such that in two communities (Adaba and Nkpologu), few people (1 and 2 respectively) died from excessive swelling after taking the drug and as a result, many people prefer to live with the disease than to die from treating it. It should be noted, however, that the root cause of the deaths is ignorance. Some people, such as those with respiratory problems like tuberculosis and asthma, who are not supposed to take the drug, take it and others drink alcohol (which should not be taken) after taking the drug, all due to ignorance. In one community (Uvuru), there was propaganda that the aim of the drug is to reduce the population of their community and so many people refuse to take it.

As mentioned earlier, one other problem that hinders people from taking the right treatment for onchocerciasis is poverty. Many people cannot afford to go to good hospitals to be treated even when they know that they can be treated. Most people testify of people that went to good hospitals and were cured of their manifestations, especially onchodermatitis, which is most dreaded but there are other people still suffering from the same manifestation in the same locality. Some of such people, due to poverty, go to herbalists and patent medicine dealers who are not in a good position to help them.

SUMMARY AND RECOMMENDATIONS

From the results reported in this paper, the people of Uzo-Uwani Local Government Area know the blackfly but do not associate the bites with any disease. They also know the manifestations of onchocerciasis but they do not know the cause. They attribute them to various causes such as poor hygiene, inheritance and old age. Because of ignorance and poverty, the people do not take the right treatment for these manifestations. Even the choice drug for onchocerciasis treatment, ivermectin, which is being distributed free of charge in the local government area, is not taken by many people because of fear and misconceptions.

From their responses, it is obvious that the people are aware of both the diurnal rhythm and seasonality of the blackfly/human contact. Their major problem is inability to associate the bites of these blackflies with the various manifestations of onchocerciasis, probably as a result of the long period between infection and manifestation of the various effects of the disease (1-3 years). With this knowledge, it appears that the most relevant intervention strategy required in this area at the moment is enlightenment. This enlightenment programme can be planned to educate them on the following:

(i) The association between blackfly bites and infection with *Onchocerca volvulus*.

(ii) The length of time taken for the infection to produce the various observable manifestations.

(iii) The fact that onchocerciasis manifestations are not contagious. This will remove the social stigma associated with such manifestations especially rashes.

(iv) The importance of taking ivermectin once a year for at least ten years in order to eliminate the reservoir in man. This will mean that even when the blackfly bites man, there will be no transmission of the parasites.

(v) The safety of ivermectin if taken according to the laid down guidelines (e.g. no alcohol intake, no previous history of respiratory or heart disease etc).

To encourage them to take the drug, emphasis should not be laid on the apparently insidious manifestations of the disease but on the ultimate effect, which is blindness and on the fatal effect of blindness on their future generations.

To implement this enlightenment programme, use will be made of the already existing Community Directed Distributors (CDDs) who are selected members of the individual communities, mostly teachers, trained by World Health Organization (WHO) under the African Programme for Onchocerciasis Control (APOC) for the distribution of ivermectin (WHO, 1996). These people will work hand in hand with the primary health care units in the various communities. It is recommended that WHO, in collaboration with the Ministry of Health and non-governmental Development Organizations (NGDO) remunerate these CDDs who have, hitherto, been left to be remunerated by their individual communities. It was found out during the study that most communities do not give them even transport money to go to the headquarters and collect drugs. As a result, most of them, though willing to work, are frustrated, and may often skip the opportunity to continue the service. Cost recovery as suggested by Amazigo *et al* (1998) and Hopkins (1998) may also be a way of helping to sponsor these CDDs. This involves payment of a token amount by each treated family.

It is also recommended that in addition to the distribution of ivermectin and the enlightenment campaign, WHO should encourage and sponsor nodulectomy as treatment method for the *Onchocerca* nodule in this local government area. The only known hindrance is the cost of removal. When the researchers sponsored the excision of nodules in Ukpata community, most infected people were willing to submit themselves for the exercise (Ubachukwu, 2001).

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