
Local knowledge and attitudes about onchocerciasis in Oji-River local government area of Enugu State, Nigeria

O. U. MANAFA^{1*} AND A. N. ISAMAH²

¹ *Nigerian Institute of Medical Research, Yaba, Lagos*

² *Department of Sociology, University of Ibadan, Ibadan*

(Accepted 11 January 2001)

SUMMARY

A total of 556 individuals in Agbalenyi Community of Oji-River local government area of Enugu State, Nigeria were studied using questionnaires, focus group discussions and key informant interviews to determine the socio-cultural factors affecting the transmission of onchocerciasis. The result revealed a low level of knowledge about the cause, prevention and complications of onchocerciasis. Respondents have developed a cultural system around the disease due to long exposure. The majority are aware of the disease which they recognize once their body starts itching or musculoskeletal pain develops but only 64·4, 34·0, 1·4 and 3·6%, respectively attributed chronic itching, nodules, bad vision and leopard skin to blackfly bite. Other perceived causes mentioned include ageing, the type of food eaten, farm work and 'bad blood'. Only 0·8% knew diagnosis could be made through skin snips. Neither Oji-River nor any of the river systems were associated with any of the complications of onchocerciasis. Significant differences in most socio-demographic characteristics were associated with differences in the level of knowledge about the disease.

INTRODUCTION

Of all the filarial parasites affecting man, onchocerciasis until recently was among the least studied in terms of its human behavioural and economic aspects. This was particularly unfortunate as West Africa is regarded as perhaps the worst endemic area of onchocerciasis in the World and WHO [1] maintains that Nigeria is the country with the largest number of infected persons in the whole of Africa.

The introduction of ivermectin has had a dramatic impact particularly on the prevention of morbidity due to onchocerciasis. Previous studies on onchocerciasis have shown that individual treatment with

ivermectin reduces considerably the number of microfilariae in the body for a minimum period of 6 months [2, 3]. Community-based treatment, however, holds more exciting prospects for the control of onchocerciasis. This is based on the belief that the control and possible eradication of the disease depends on mass treatment programmes involving all the communities in the endemic area. Hence the fairly large number of community-based studies currently in progress in Nigeria. The active participation of the target communities is vital to any control programme and this involves a dynamic process with all the main participants. One vital issue is the acceptance of drug usage in the endemic communities for a period of 10–15 years. This is the expected period for distribution [4]. This work was designed to explore the local knowledge and attitudes of an endemic population to onchocerciasis so as to identify some of the

* Author for correspondence: Nigerian Institute of Medical Research, 6 Edmond Crescent, P.M.B. 2013, Yaba, Lagos, Nigeria.

socio-cultural factors that impinge on the epidemiology and control of onchocerciasis and also influence the acceptance of ivermectin. This information is needed by both scientists and government policy makers involved in the effort to control the disease.

METHODOLOGY

The study was carried out in Oji-River Center, a village in Oji-River local government area of Enugu State, Nigeria which lies in the forest area of Nigeria. Of a population of about 1700 people the majority are of the Ibo ethnic group. The villagers are served by only one bore hole; hence they depend on Oji-River as their major source of water supply. This river is very rocky with a topographical feature that creates ideal breeding sites for the vector.

Selection of the study population was through random sampling. Each of the four wards in the study area served as a stratum. A total of 138 households were used and 34 of these households were selected from each stratum. Adults between the age of 15–65 years were selected for the study. These persons will have been more exposed and able to explain their knowledge of the disease than young children. Four members of each household were selected, the father, the mother and one randomly chosen male and female child or relation above 15 years old constitute the respondents. A total of 556 respondents from 138 households were interviewed.

Four methods of data collection were adopted to fulfil the objectives of the study, namely, the semi-structured interview based on a questionnaire, focus group discussions, key informant interviews and participant observation techniques. The interview schedules include the respondents' knowledge, belief system and feeling surrounding the causation, transmission, treatment and prevention of the disease and their felt needs. Questions about the family socio-economic status were also included in the survey. Group discussions with community leaders and members of the community were used to supplement the observations and the questions. Six focus group discussions were held in the whole study. Eight to ten persons were used per group. In each group knowledge, attitudes, belief and behaviour of the community about onchocerciasis was explored using a focus group discussion guide. Each discussion lasted 60–90 min and discussions were noted down by a member of the research team. The analysis of group discussions was performed using the Text base alpha programme.

In-depth interviews were undertaken with key informants. Key informants were selected on the basis of the following criteria (a) clinical case and non-case informants representing various occupational groups in the community and (b) on the basis of age and length of stay in the community.

A coding manual was prepared for the questions and the responses of the questionnaires were transferred into coding sheets. The data collected were analysed using the special package for social sciences (SPSS software). Frequency distribution were generated for all the variables and later for collapsed categories. Statistical comparison of data were tested using the χ^2 test and Students *t* test with a significance level of 5%. Of the 45 questions that were asked 32 were related to knowledge of the disease and were used in the quantitative analysis. The mean knowledge score of respondents were measured by giving all questions on knowledge corresponding scientifically accepted answers and each item assigned a score of 1 after Lu et al. [5]. The total perfect score was 32 and individual perfect scores depended on the number of correct scores they had. The mean knowledge score was then found for each respondent type.

RESULTS

Of the 556 respondents, 290 (52.2%) were male while 266 (48.8%) were females. The majority of them were farmers with some combining farming with other jobs. The mean age of the respondents was 42.5 years, 84.9% were Ibos, and 52.9% were married at the time of interview; 17.3% had no formal education and only 5.7% of the respondents had above secondary education. The average duration of residence in the community was 24 years (range 2 months–70 years).

The indigenous knowledge of the disease

The disease popularly known as 'Okò nyi mbo' (itching that has outpowered the nails) in the study community was recognized by 89.9% of the respondents. The term was as familiar to endemic populations as the universally occurring illnesses. Complete recognition of the term is explained by persistent itching.

64.4% of the respondents attributed chronic itching to blackfly, while 34.9% thought nodules to be caused by blackfly bites. The majority did not know the cause of blindness and only 1.4% could attribute it to insect bite. Survey participants identified itching, fever

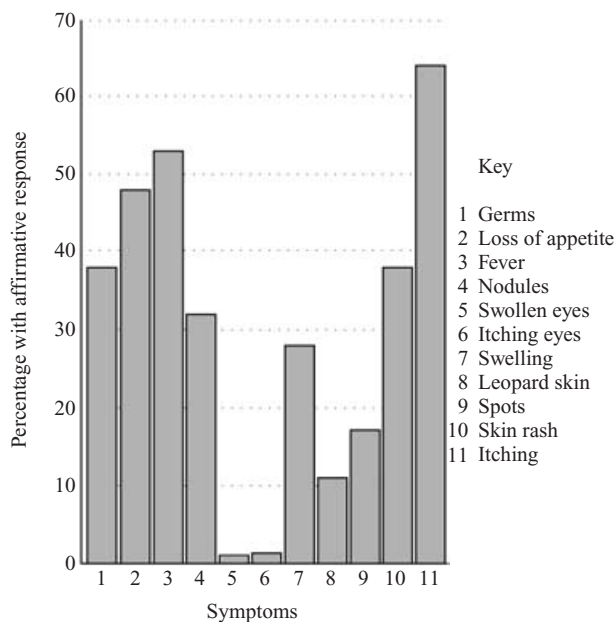


Fig. 1. Knowledge, attitude and practice survey in Oji-River. Percentage of respondents attributing a symptom or an illness to onchocerciasis. (n = 556)

and loss of appetite with untreated onchocerciasis. In contrast, eye related conditions were less frequently associated with the disease (Fig. 1). Baseline formal interview indicated the existence of three major groups of belief that respondents had about onchocerciasis apart from it being caused by insects (Fig. 2):

- (1) The germ causing onchocerciasis was normally in the body and scratching only manifests the germ.
- (2) Nodule formation was due to beef eaten in young age and that explains the higher occurrence of nodules in older people.
- (3) Disease occurs due to old age and too much farm work.

Survey participants associated cow humps to nodule formation and to them the more cow humps you eat in young age the higher the possibility of developing nodules in old age.

The prevalence of the disease had nothing to do with the Oji-River and complication of onchocerciasis include reduced libido in men, reduced strength for farm work and blurred vision of both men and women.

Almost half of the respondents (48.8%) believed that there was a possibility of their having onchocerciasis since their parents have already been afflicted. 71.2% pointed out that both males and females are likely to have the disease, while 44.2% said that adults are more prone to the disease than children. Only 30% of the respondents believed that a treated

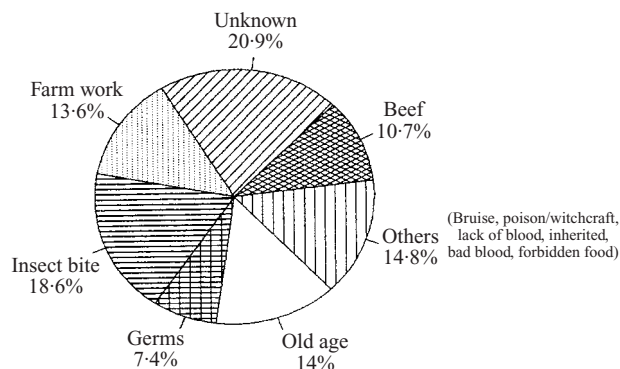


Fig. 2. Knowledge, attitude and practice survey in Oji-River. Respondents beliefs about causation of onchocerciasis. (n = 556)

person can still contract the disease, of these 50% said that it was due to persistent biting.

89.3% of those interviewed did not know that the disease could be diagnosed. Those who did know thought it is only the doctor who can determine the presence of the disease. Only 0.8% knew diagnosis to be through skin snip examination.

When asked if the disease was curable, 68.7% responded in the affirmative and 35.5% believed that the best treatment would be obtained from hospital health care. However, 11% considered nodulectomy to be dangerous due to pain. A few of them still mentioned the use of traditional treatment measures.

Prevention was thought possible by 55.8% of the respondents. 24.5% suggested controlling the disease through a doctor, while fewer (10.1%) suggested the use of drugs. Only 4% thought that control could be through blackfly elimination or protecting themselves from blackfly bite (Table 1).

Average total knowledge score for all the respondents was 10.9 ± 6.5 others, which include older uncles and aunts who were apparently the most knowledgeable among the respondents. The fathers' mean score was the lowest and this may be explained by their being the most traditional group of the study community. However, none of the differences attained statistical significance.

An item analysis was conducted of specific questions in the survey to determine if there were sub-group difference in knowledge of aetiology, transmission, diagnosis, treatment and outcome, of onchocerciasis. A systemic difference were observed in age, level of education, occupation, time living in the endemic area and the level of knowledge about the disease. This actually indicates the role of education

Table 1. *Respondents' knowledge about disease control (n = 556)*

Method	Number	Percentage
Separate sick person	92	16.5
Consult a doctor	136	24.5
Use drugs	56	10.1
Kill the black flies	22	4.0
Eat the right kind of food	42	8.6
Avoid contact with river	68	12.2
Cover the body	11	2.1
Don't know	134	24.1
No response	16	2.9
Others	12	2.2

Percentages of all persons do not add up to 100 due to multiple methods known for control by same person.

Table 2. *Respondents' knowledge about onchocerciasis in relation to occupation (n = 556)*

Occupation	Number interviewed	(%)	Mean knowledge score
Trader	96	17.3	7.3 ± 3.76
Farmer	142	25.5	5.5 ± 5.78
Teacher	38	6.8	6.8 ± 1.32
Artisans	10	1.8	1.8 ± 0.35
Palmwine tapper	18	3.2	3.2 ± 0.63
Housewife	26	4.7	4.7 ± 2.90
Student	104	18.7	18.7 ± 13.62
Government employee	122	21.9	21.7 ± 14.25

Table 3. *Respondents' knowledge about onchocerciasis in relation to age (n = 556)*

Age (in years)	Number interviewed	(%)	Mean knowledge score
10-20	182	32.7	7.2 ± 5.41
21-30	110	19.8	16.5 ± 13.96
31-40	92	16.5	19.8 ± 15.06
41-50	92	16.5	10.3 ± 7.47
51-60	34	6.1	6.1 ± 3.18
60 and above	46	8.3	8.3 ± 3.60

in the acquisition and internalization of scientific information (Tables 2-4).

Attitudes towards the disease

Onchocerciasis was thought to be contagious by the study community. 71.2% said they would not be comfortable having physical contact with afflicted people. It is generally held and accepted that once a parent has onchocerciasis it was likely that the rest of the family would have it. All the same, families did not separate bedding, eating utensils of the patient

and the sick member from other members of the family. The reason given being that it would not prevent them from catching the disease. Respondents believed that a sick person can still mix socially and only 45.7% thought the disease to be a hindrance to their work.

DISCUSSION

The investigation explored social and cultural factors related to onchocerciasis among residents of Oji-River. The study was principally motivated by the

Table 4. Respondents' knowledge about onchocerciasis in relation to their level of education (n = 556)

Level of education	Number interviewed	(%)	Mean knowledge score
No formal education	96	17.3	2.7 ± 1.96
Attend literacy class	166	29.9	4.3 ± 3.86
Primary education	120	21.6	6.1 ± 4.79
Secondary education	93	16.7	25.9 ± 12.85
Tertiary education	34	6.1	21.6 ± 13.53
Teacher education	28	5.0	16.2 ± 10.50
Vocation/technical	19	3.4	5.0 ± 0.60

need for information for planning a community educational participation programme.

The findings on the knowledge and attitude of the people in the study areas towards onchocerciasis indicate a clear awareness of the disease arising perhaps from long-standing information from elders through the ages.

Many of the study population have heard about the disease as a result of their actual exposure to afflicted people and interacting with peers. The need for words to identify the disease resulted in the emergence of local terminologies such as 'Okonyimbo'. As described by Rosenfield et al. [6] the school-age population is one of the vulnerable group known to suffer serious consequences from the environmental hazards. There is no doubt that much of the human behaviour that contributes to the transmission of onchocerciasis has its roots in the practices, health beliefs and perceptions learned early in life.

The appearance of onchocerciasis symptoms is attributed to various causes such as bad water, too much farm work, old age, spells cast by enemies and bad blood. Previous reports [7-9] found the belief about cause to be true of people in Mali, farmers living in Ibarapa local government area of Nigeria and Guatemalans targeted for mass chemotherapy.

The Simulium fly known as 'Kpukpu' by the local inhabitants and which is well recognized by the local farmers as a biting nuisance in the dry season is often not associated by them with the disease. Though people are fairly familiar with some symptoms of onchocerciasis the belief about it is quite varied. Consequently the urgency to submit oneself to skin snip

and other type of examination for early detection of the disease is overlooked.

Since sociodemographic characteristics are associated with knowledge, priorities in educational programme should be given to individuals with low standards of education and those who had lived in endemic areas for only a short period of time.

REFERENCES

1. World Health Organization. Expert Committee on Onchocerciasis. Technical Report Series 752, 1987.
2. Campbell WC. Ivermectin: an update. *Parasitol Today* 1985; **1**: 10-6.
3. Dadzie KY, Bird AC, Awadzi K. Ocular findings in a double blind study of Ivermectin versus DEC in the treatment of onchocerciasis. *Br J Ophthalmol* 1987; **71**: 78-85.
4. World Health Organization. Thirteenth Programme Report (1995-1996) of the Tropical Disease Research, 1997.
5. Lu AC, Valencia AB, Liag L, Aballa L, Postrado L. Filariasis: a study of knowledge attitude and practice of the people of Sargoson. WHO/TDR. Social and Economic Research Project Reports No. 1, 1988.
6. Rosenfield PL, Golladay F, Fond Davidione R. Economics of parasitic disease: research priorities. *Soc Sci Med* 1985; **19**: 1117-26.
7. Imperato PJ, Sow O. Incidence of and beliefs about onchocerciasis in the Senegal River Basin. *Trop Geog Med* 1971; **23**: 385-9.
8. Wyatt GB. Onchocerciasis in Ibarapa, Western Nigeria. *Am Trop Med Parasite* 1971; **00**: 65513-23.
9. Richards F, Klein RE, Conzales-per alta C, et al. Knowledge, attitudes, perceptions (KAP) of onchocerciasis. A survey among residents in an endemic area in Guatemala targeted for mass chemotherapy with ivermectin. *Soc Sci Med* 1991; **32**: 1275-81.