

Perception Of Inhabitants In Bui Township On Causes And Effects Of Onchocerciasis, Ghana

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Abstract: An investigational study on Onchocerciasis, also known as river blindness was conducted in Bui, a town in the Brong-Ahafo Region of Ghana. This disease has recorded high values in this area of study and has been of national concern. The core aim of the studies was to assess the perception of the community members on causes, effect and control of Onchocerciasis in Bui Township. A survey was conducted to obtain primary data from 100 respondents in three communities in the Bui Township and data were analyzed quantitatively and qualitatively using Microsoft excel. The outcome of the study indicated 99% of respondents were aware of the presence of blackfly, while 79% were knowledgeable about blackfly bite as the major cause of Onchocerciasis. Yearly treatment of the disease with a single-dose of Ivermectin within the three communities by the government through the ministry of health was established by the investigation. The study revealed a positive perception by Onchocerciasis-infected persons in the area regarding the causes, effects and control of disease. However, other findings indicated the awareness of the communities on the socio-economic and psychological effects of the disease and therefore has relatively high expectations from the government to curb the disease. The study therefore recommends further studies on the effectiveness of the yearly single dose in the treatment of Onchocerciasis.

Keywords: Onchocerciasis, perception, causes, effects, inhabitants, Bui, Ghana.

1 Introduction

Onchocerciasis, also known as river blindness is parasitic infection which is associated with impaired vision, blindness and dermatitis on the afflicted [1]. It is one of the world's major endemic parasitic diseases [5], [7]. Onchocerciasis affects approximately 18 million people globally with the majority coming from sub-Saharan Africa, where it is responsible for the loss of 1 million annually [11]. According to [1] and [12], as referenced in [2], Onchocerciasis is the major cause of 60% of blindness in different parts of Africa. The known cause of the disease is *Onchocerca volvulus*, a filarial worm transmitted by *Simulium damnosum* commonly called Black fly which breeds in fast running rivers in both forest and savannah zones. The adult worm lives in nodules within the human body and produces microfilaria in thousands which produces toxic effects after the death of the microfilaria as signs and symptoms [6],[3]. Primarily, a blackfly takes a blood meal in the process of biting a human; it transmits infected larvae into the body through the blood stream into the subcutaneous tissues where they stay until they develop into adults for a period of 4-7 months. As they become worms, they are encapsulated in the fibrous nodules and live for 10 years or more in the body. During their stay, they multiply into smaller worms called microfilaria which form an infection under the skin and also in the eye [6], [3]. Aged people of about 55 years and above are mostly affected by the disease because of their vulnerability. Clinically, they show signs of wrinkling, scarring, atrophy of the skin, edema of the limbs and inflammation of the cornea of the eye leading to blindness [6]. At a level, presence of the microfilaria under the skin causes premature aged appearance of the skin with patchy pigmentation like a leopard skin [8]. *Onchocerca* situation in Bui and its surrounding communities is no different from what has been referenced in the preceding paragraphs. The prevalence of Onchocerciasis in Bui ranges from 48.5% in Akanyakrom, to Dokokyena which is 39.7% and 11.8% in Bui city all inclusive in Bui Township [13]. Researches` conducted in Bui indicate that persons living with the river blindness incur serious body wrinkles, impaired vision and sometimes death [13]. This presents a big threat to the health, general well-being and survival of the people especially the sub-sensitive population groups

such as children, pregnant women and the aged. The situation has not only affected the health of the affected people, but also their socio-economic lives. Socially, the diseases has left stigma on the affected people in the communities. Moreover, the symptoms have important personal and psychological effects not only on the effected individual but also on their families and community members as a whole . The productivity of the affected people has either come to a halt or reduced to the barest minimum leading to increased poverty. Although a lot of attention has been paid to the clinical symptoms associated with Onchocerciasis; there is little knowledge about the disease among the inhabitants of Bui. Large proportions of the community members hold misconceptions about its causation, transmission, prevention and risk. This study will therefore bring to light the knowledge of the community members on the disease to serve as a basis for implementing any intervention programs and serve as a baseline information for further research into the disease. The study therefore is to investigate the perception of the community members on causes, effect and control of Onchocerciasis in Bui Township.

2.0 Materials and Methods

Bui community is located in the middle belt of Ghana in the Banda-Ahenkro District in the Brong-Ahafo region of Ghana. The area covers 4,800sqkm with part exceeding into the Black Volta where the new Bui hydroelectric power dam is being constructed. At the outskirts of Bui, is a fast running river which flows in the rain forest as a tributary to the Black Volta. The choice of descriptive research design was predetermined by the nature of the study to obtain information concerning current status of a phenomenon that describes what exist with respect to the variable or conditions in a situation. 100 Onchocerciasis-infected individuals were selected from the three communities Akanyakrom, Dokokyena and Bui City in a ratio of 3:3:4 respectively due to their respective population size.

2.1 Data Collection Instrument/Procedure

Structured questionnaires were designed with open and closed-ended questions to get a standardized form of responses from the questions and to allow respondents to

be independent in expressing their views. The completed questionnaires were retrieved over a period of seven days following a constant follow ups. Pre-Test of Questionnaires was carried outside the study area in a locality (Banda Nkwatia), with similarities in socio-demographic characteristics. 20 respondents were selected at random for this exercise where the feedback obtained contributed immensely to the work.

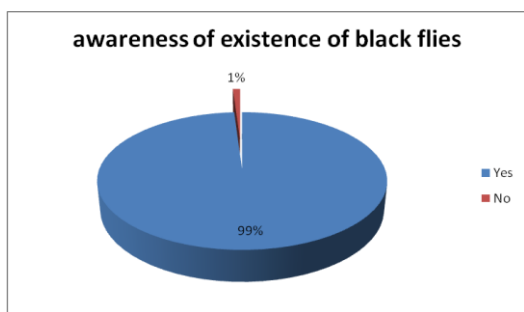
2.2 Data Analyses Procedures

Data were analyzed using quantitative and qualitative methods using Microsoft excel and presented in graphs and pie charts.

3.0 Results and Discussion

3.1 Knowledge of Respondents on Onchocerciasis in the Community

The data gathered from the field revealed that, 99% out of the respondents in the three communities of Bui were aware of the presence of the black fly in the area, while 1% said they were not aware of the presence of blackfly as shown in fig. 1. This implies that most of the respondents are aware of the presence of black fly in their environment and the type of agents that are likely to affect their well-being.

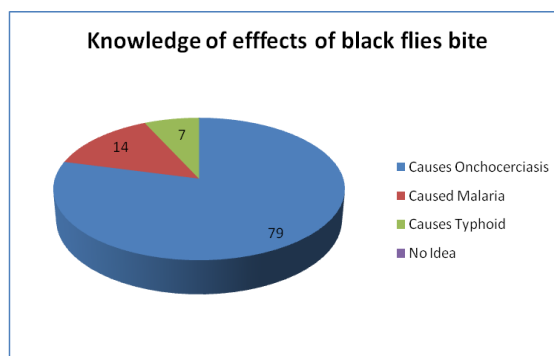


Source: Field Work, 2013

Fig. 1: Awareness of Existence of Blackflies

3.2 Knowledge of Effects of Black Flies Bite

In fig. 2, 79% of respondents know the effects of black flies bite as causing Onchocerciasis. On the contrary, 14% believed that black flies bites causes malaria, while only 7% associated blackflies bite with typhoid. Even though majority of respondents mentioned Onchocerciasis as the effects of blackflies bite, they could not express that the blackflies are vectors parasites that carries the actual causative organism, the parasitic worm known as '*Onchocerca volulvus*'. However, this provides enough grounds to generalize that members in the Bui communities are aware of the dangers of blackflies.

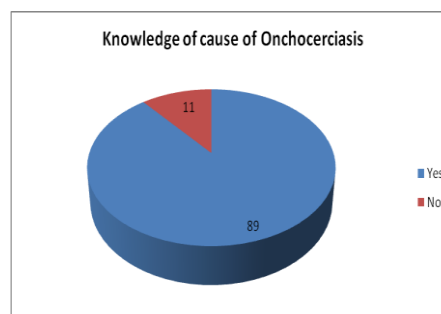


Source: Field Work, 2013

Fig. 2: Knowledge of Effects of Black Flies Bite

3.3 Knowledge of people on the Causes of Onchocerciasis

89% of respondent confirmed their knowledge of the Onchocerciasis disease while 11% admitted of their ignorance to the cause of the disease. A survey conducted in the Edo state of Nigeria relates to 83% of respondents admitting to know the main cause of Onchocerciasis which collate to the findings in context to fig. 3.



Source: Field Work, 2013

Fig. 3: Knowledge of people on the Causes of Onchocerciasis

3.4 Knowledge on Causes of Onchocerciasis

It was also indicated that 11% of the respondents were unaware of the causes of the disease, which was in contradiction to earlier response when a total of 21% of respondents responded that black bite causes malaria and typhoid. However, this result was ascertain by [10] with responses from inhabitants with 5% claiming the cause of the river blindness was attributed to reactions of itching and scratching while 2% said it was malaria with 11% admitting to blindness.

3.5 Medication for River Blindness

Participants responded 'Yes' to treatments and vaccination for the Onchocerciasis disease which suggest all the respondents have been undergoing treatment of the disease.

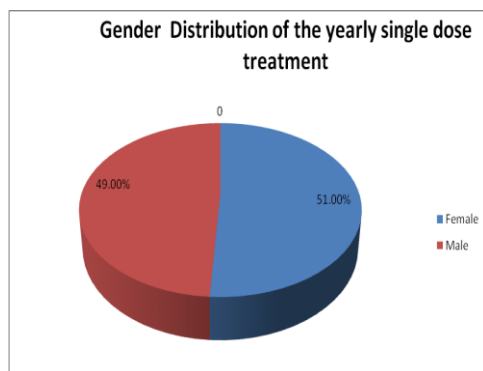
3.6 Source of Medication for the Disease

Respondents confirmed the source of medication from the Ministry of Health through Ghana Health Service and that, neither of them sought medication from herbalists or spiritualists. In context with these findings, Merek and Co.

Inc. has donated ivermectin for the past 20 years to countries being affected by Onchocerciasis through public health entities, donors and the Ministries of Health and also to help curb the transmission and the parasite through monotherapy.

3.7 Gender Distribution of the Yearly Single-Dose Treatment

A further interview with respondents revealed that even though the whole community had received a yearly single-dose treatment of ivermectin drug during the year, more females (51.28%) than males (48.72%) of the populace accepted the ivermectin as shown pictorially in fig. 4 which is in contrast to a research done by [9]-African Programmed on Onchocerciasis Control in Cameroun relates among females 41.1% were in the high compliance groups compared with 44.7% of males.



Source: Field Work, 2013

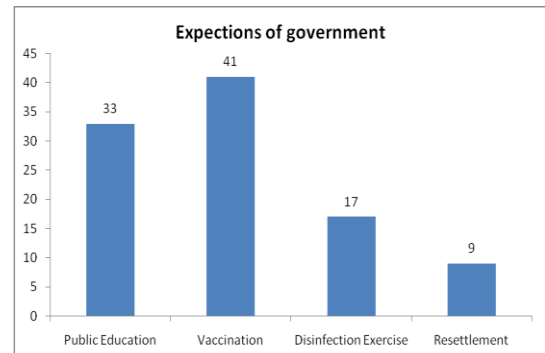
Fig. 4: Gender Distribution of the Yearly Single-Dose Treatment

3.8 The Knowledge Level of the Community Members on Government Involvement

Analysis of data obtained through interview schedule conducted indicates that respondents were aware and were beneficiaries of government interventions in the control, treatment and management of the disease. All the respondents indicated that, treatments was received as an intervention from government of Ghana; hence it came with no cost to the beneficiaries.

3.9 Expectations of Respondents from Government

The bar chart in fig. 5 indicates that, respondents on a scale of liking ranked vaccination as the most preferred expectation from government with 41% respondents showing preference for it. With 33% respondents, intensified public education was ranked the second most preferred alternative for managing the Onchocerciasis disease in the communities. Again as shown in the graph, disinfection exercise in the communities was ranked third with 17% respondents while resettlement was ranked the least preferred alternative with only 9%.



Source: Field Work, 2013

Fig. 5: Expectations of Respondents from Government

4 CONCLUSION

The findings of this study indicated a positive perception by Onchocerciasis-infected persons in the three communities, Akanyakrom, Dokokyena and Bui city regarding the causes, effects and control of Onchocerciasis disease. In general, 99% members of the three communities demonstrated a high sense of knowledge of the disease in line with scientifically proven knowledge about the disease and its impact on their socio-economic and psychological status. 89% of the respondents established their knowledge about the blackfly as a causative organism of the disease rather than a vector. It was also indicated that, the communities had good views about the management and treatment of the disease and participated in the Ivermectin vaccination program by the World Health Organization and Ghana Ministry of Health. However, with reference to management of the Onchocerciasis situation in the area, the people expect the government to implement a continuous provision of vaccination program, public education, disinfection exercise and possibly, a relocation of residence.

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