

Community drug distributors' experiences and challenges faced in the implementation of community-directed treatment with ivermectin programme for onchocerciasis control in Ulanga, Tanzania

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Short Report

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Abstract

Background: Community drug distributors (CDDs) have a crucial role in distributing ivermectin for onchocerciasis control and prevention. Their experiences and challenges faced in the implementation of the community-directed treatment with ivermectin (CDTI) programme could potentially affect coverage, consequently leading to persistent transmission. Therefore, this study aimed to explore CDDs experiences and challenges faced in the implementation of the CDTI programme in Ulanga, Tanzania.

Methods: A qualitative study was conducted in Ulanga, Tanzania, in 2018. An in-depth interview guide was used to collect data from 5 CDDs above 18 years who were selected purposively. The analysis was performed using a thematic framework approach to generate codes, categories and themes.

Results: Out of the five CDDs interviewed, two had 15 to 20 years of experience in the implementation of the CDTI programme, while the remaining CDDs had less than 10 years of experience. The main challenges faced by CDDs in the implementation of the CDTI programme include the geographical location of the hamlets (hard to reach hamlets), long distances between houses, low compliance of community members to medication due to fear of side effects experienced before and mistrust of methods of dose calculation, short time of drug distribution and absence of people from their households as the exercise was conducted when community members were involved in agricultural activities.

Conclusions: The use of CDDs in the implementation of the CDTI programme has been successful despite the challenges mentioned. It is now opportune time to address the challenges that CDDs are facing in the implementation of the CDTI programme to ensure effective control of onchocerciasis in the district.

Introduction

Onchocerciasis is one of the neglected parasitic diseases, most endemic in tropical areas where some fast-flowing rivers and streams support the survival of blackflies. The burden of onchocerciasis is high in Africa, with 99% of cases (1). It is estimated that 20.9 million people were infected with *Onchocerca volvulus* globally in 2017. Among the infected people, 14.6 million had a skin disease, and 1.15 million had vision loss (1,2).

The main intervention to control onchocerciasis disease is community-directed treatment with ivermectin (CDTI). The CDTI strategy was introduced by the African Programme for Onchocerciasis Control, which involves the use of community members known as Community Drug Distributors (CDDs) for ivermectin delivery in communities (3). The CDTI programme has proven to be successful in reducing onchocerciasis transmission and morbidity when applied annually at coverage of at least 80% within 12 to 15 years (4,5). However, the persistent transmission of onchocerciasis has been reported in some areas after 17 to 20 years of annual CDTI (6,7). CDDs play a crucial role in the implementation of the CDTI programme; they consist of volunteers selected by community members to distribute ivermectin (8).

CDDs are trained and retrained every 1 to 2 years to deliver drugs in the community and educate community members on health issues (9).

In the Ulanga district where this study was conducted in Tanzania, a persistent transmission of 2.9% was observed after two decades of annual CDTI (V. Mushi, unpublished). This was supported by the presence of 0.57% infected black fly vectors from the same area, indicating that the two decades of annual CDTI have not interrupted transmission (10). CDDs are vital in ensuring the success of the CDTI programme, and the challenges they face in implementing the CDTI programme have not been fully explored and mitigated. The challenges could be a hindrance to effective implementation of the programme, hence elimination of the disease. Therefore, this short report aims to describe the experiences of community drug distributors and challenges they faced in the implementation of community-directed treatment with ivermectin programmes for onchocerciasis control in Ulanga, Tanzania.

Methods

Study design and setting

A community-based cross-sectional study involving qualitative methods of data collection was carried out in the Ulanga district between June and July 2018. This study was a part of the large study that was conducted in the Ulanga district in June and July 2018. Ulanga was selected because of persistent transmission of onchocerciasis despite more than two decades of CDTI programme implementation. The Ulanga district lies at a latitude of $-8^{\circ}59'19.90''$ S and longitude of $36^{\circ}36'47.92''$ E. The district experiences tropical climatic conditions and is characterized by perennial rivers that support the breeding and survival of *Simulium damnosum* s. l (7).

Study population

A total of 5 key informants (CDDs) above 18 years of age were selected purposively in two villages, three were from Uponera village and two were from Isongo village to explore their experiences and challenges they faced during implementation of the CDTI programme in Ulanga.

Data collection

A broad, open-ended interview guide was prepared by the researcher and had five sections. The first section collected information on the sociodemographic characteristics of respondents, while the second section was composed of questions on the experience, selection and training of CDDs. The third section was composed of questions on participation, distribution of drugs and coverage of the CDTI programme. The fourth section was composed of questions on challenges they were facing during the implementation of the CDTI programme, and the last section had questions on improvement of the CDTI programme. The interviews were conducted in Kiswahili language and were audiotaped. Short notes were also taken to ensure that all the questions and responses were properly recorded.

Data analysis

The collected data from in-depth interviews were analyzed qualitatively using a thematic framework approach. The collected audio data were transcribed verbatim in Kiswahili to obtain the textual format and then translated to English and thereafter back into Kiswahili. The data were coded manually and then organized into categories. Finally, analysis and interpretations were performed by clustering similar and related topics together to form major themes, as presented in the results section.

Results

Sociodemographic characteristics of the study respondents

A total of 5 community drug distributors were interviewed, and their ages ranged from 25 years to 70 years. All CDDs interviewed were self-employed and residents of the Ulanga district, as shown in Table 1.

Experience, selection and training of CDDs

Of the five CDDs interviewed, four were appointed by the village executive officer and members of the village committee because of their experience in community services and hard work, except for only one who volunteered. This shows that community members in Ulanga do not participate in the selection of CDDs they want.

The results showed that only two CDDs had worked in their position for 15 to 20 years and the remaining CDDs had worked in their position for less than 10 years. The following are some of their statements:

".....I have been working as a volunteer CDD for 15 years; I volunteered to work in this position because at that time no one wanted to work in this position" (Female respondent, Uponera, 55 years).

".....I was a nurse assistant at the time CDTI programme started in 1997 people used to come and take ivermectin at the district hospital, so when the distribution of drug started directly in the community I was appointed by village executive officer to help my community because of my experience" (Female respondent, Isongo, 49 years).

When the CDDs were asked and probed on the type of training that was given for their position, all of them stated that they were trained every year before the distribution of the ivermectin. One of the CDDs, for example, had this to say:

".....The training is given once every year to remind each other on how to distribute drugs, the measurement to be taken to know the exact dose taken by a person, and how to manage side effects as a result of treatment" (Male respondent, Uponera, 70 years).

Community participation, distribution and coverage on the CDTI programme

CDDs were asked to state how they distributed ivermectin and how they ensured community participation in the CDTI programme. The results showed that *"house-to-house distribution"* was the main approach

that was employed to distribute ivermectin, and in regard to participation of the community in the programme, the CDDs said they had the following roles:

“..... After taking the medication from the district hospital, I must announce to community members, emphasize them to take medication and then I distribute the drugs from one house to another in the entire hamlets” (Female respondent, Uponera, 55 years)

“.....In the past community members used to collect medication at my house, but now I must pass house to house so as to ensure people take medication and if people are not there I must come back or leave the message for them to come to collect the medication” (Male respondent, Uponera, 70 years).

It was observed that according to gender, the coverage and taking of ivermectin was higher in women than men, as confirmed by one of the CDDs;

“.....Women are highly participating in the control programme compared to men except those who are sick, pregnant or have delivered within five days at the time of drug distribution” (Male respondent, Isongo, 51).

Challenges faced by CDDs on implementation of CDTI programme and recommendation for improvement

CDDs were interviewed on the challenges they were facing during ivermectin distribution because these challenges affected the use of ivermectin in the community and hindered the effective success of the CDTI programme to control onchocerciasis disease. The challenges mentioned were mainly geographical relating to the location of the hamlets. Some of the hamlets were hard to reach, which led to the failure of CDDs to cover all houses; long distances between houses made the CDDs walk extra miles and spent many days distributing the drugs. Another challenge was the low compliance of community members to medication due to fear of side effects experienced before and mistrust of methods of dose calculation. The absence of people from their houses was another challenge; in Ulanga, many community members were migratory farmers. The CDTI programme was conducted during the farming season when many community members were involved in agricultural activities. Another challenge was the duration of drug distribution. The time allocated for drug distribution was short, and CDDs were required to return the ivermectin to the health centers after a month. The following are some of their responses as revealed by two CDDs:

“..... There are several challenges that I face as a CDD. Some community members refuse to take medication because of side effects, such as wasting time going to a certain house and talking to them and ultimately refusing to take medication. Also, the geographic location of our village is the problem because houses are far from each other so it's difficult to reach every house” (Female respondent, Isongo, 49 years).

Another CDD mentioned transport to be a critical problem;

“.....Transport is the problem in our village which makes the distribution to be difficult hence some of the houses are left unattended. The number of days for distribution of medicines are few that we are supposed to return the remaining medicines to district hospital after a month” (Male respondent, Isongo, 51 years).

On recommendations for improving the CDTI programme, the CDDs gave the following recommendations as a strategy to mitigate the challenges faced in the implementation of the CDTI programme. The distribution of drugs should be done after the farming season when people are at home and are free to participate. Transport fees should be given so that drugs can be distributed in all villages. Training that is given before the distribution of drugs should be done for at least three days because they are different in understanding and these drugs are poison. Health education about onchocerciasis should be given to community members at least once a year to avoid all misconceptions about the treatment.

Finally, all CDDs recommended allowance to be given to them to increase their morale for work as they were not benefiting anything from being CDDs and the work was very difficult.

Discussion

CDDs have a significant role in ensuring that the community participates in the CDTI programme. It is important for the community to be careful when selecting CDDs because they can influence, motivate and educate the community to participate in the CDTI programme (7,11). However, in Ulanga, community members are not involved in the selection of CDDs, and the majority of them are appointed by village executive officers, with the exception of a few who volunteered the practice, which is inconsistent with WHO regulations (8). It was observed that some of the appointed CDDs were highly experienced because they have been working in this position for a long time since the beginning of the CDTI programme and hence have received several trainings. CDDs in Ulanga are trained every year on how to distribute drugs properly in the community to educate community members on the importance of ivermectin treatment. The findings are similar to the findings of the study conducted in North-Western Ethiopia on knowledge, attitudes and practices of CDDs about onchocerciasis and CDTI (9).

The distribution of ivermectin in Ulanga is through house-to-house distribution, which is in accordance with WHO guidelines (8). CDDs in Ulanga have a role in educating, motivating and ensuring that community members participate in the control of onchocerciasis by visiting households before ivermectin distribution to sensitize the community. Clearly, some of the challenges mentioned by CDDs in the implementation of the CDTI programme in Ulanga, such as hard-to-reach hamlets, doubt about the method of dose calculation and fear of side effects, were also revealed by another study performed in Tanzania by (12).

With regard to gender, women were highly participating in the control programme compared to men, especially when they saw their fellow women as CDDs. In Tanzania, female CDDs have been shown to be more tolerant and patient than men (13). In Uganda, for example, approximately 70% of the community members believed that women were more persuasive, committed and patient compared to men in regard

to ivermectin distribution activities, hence improving the compliance of community members towards treatment (14).

Conclusions

CDDs have played a critical role in ensuring the success of the CDTI programme for onchocerciasis control in Ulanga. The low experience of some CDDs coupled with the challenges they are facing in the implementation of the CDTI has the potential to affect the total uptake and coverage of the CDTI programme. Therefore, as we are aiming to eliminate onchocerciasis by 2030, now more than ever, it is the opportune time to address the ongoing challenges to improve and sustain coverage of the CDTI programme in Ulanga district.

Declarations

Ethical approval and consent to participate

Both verbal and written informed consent were obtained from the study participants. This study was reviewed and approved by the Muhimbili University of Health and Allied Sciences Ethical Review Board (DA.287/289/01.A/).

Consent for publication

Not applicable.

Availability of data and materials

All the data used and analyzed are available from the corresponding author upon reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

VM is the sole contributor to this article. The author read and approved the final manuscript.

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Abbreviations

CDDs	Community Drug Distributors
CDTI	Community-Directed Treatment with Ivermectin
WHO	World Health Organization

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Table

Table 1: Socio-demographic characteristics of study respondents (n=5)

Characteristics	n (%)
Gender	
Male	2 (40)
Female	3 (60)
Age group	
25-35	1 (20)
36-45	-
46-55	3 (60)
> 56	1 (20)
Level of Education	
Primary school education	4 (80)
Secondary education	-
College/University education	1 (20)
Occupation	
Employed	-
Self-employed (Peasants)	5 (100)
Duration of residence	
25-35	1 (20)
36-45	-
46-55	3 (60)
> 56	1 (20)