

## Compliance to Mass Drug Administration Programme for Lymphatic Filariasis Elimination by Community Members and Volunteers in the Ahanta West District of Ghana

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### Abstract

Lymphatic Filariasis (LF) is one of the oldest and debilitating neglected tropical diseases. The global strategy for its elimination is based on Mass Drug Administration (MDA) to interrupt transmission. However, elimination can be achieved only when the key players comply with the programme guidelines and requirements. We conducted a household survey in the Ahanta West district of Ghana four weeks after the 2012 MDA to determine the level of compliance to the programme. Fifteen communities were selected from a random list of communities in the district, after which 384 households were randomly selected. Data including socio-demographic characteristics, knowledge and participation in the MDA on all eligible individuals in the selected households were collected through the household head or any responsible adult  $\geq 18$  years. Multiple logistic regression models were used to identify factors associated with compliance. Compliance as estimated from the current study was significantly lower (43.8%; 95% CI: 41.3-46.3) than that reported by the community-based volunteers (83.6%; 95% CI: 83.3-83.9). Taking the drugs was associated with occupation ( $p < 0.0001$ ), educational level ( $p < 0.0001$ ) and age ( $p = 0.007$ ). The odds of not receiving the drugs were significantly associated with the side effects (OR=5.67, 95% CI: 4.45-7.21,  $p < 0.0001$ ), absence of disease in the family (OR = 0.72, 95% CI: 0.67-0.78,  $p < 0.0001$ ) and low risk perception (OR = 0.26, 95% CI: 0.12-0.42,  $p < 0.0001$ ). A high proportion (31.8%) of respondents were not visited by the drug distributors while 18.2% were absent at the time of distribution. The need for revisits has to be emphasized to improve the level of compliance. Improved health education focusing on the safety of drugs and the importance of MDA needs to be undertaken before and during the drug distribution exercises.

**Keywords:** Mass drug administration; Lymphatic filariasis; Community-based distributors; Compliance; Ivermectin; Albendazole

### Introduction

Lymphatic Filariasis (LF) is a neglected tropical disease caused by filarial nematodes. There are three species of parasitic nematodes namely *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori* responsible for causing the disease. LF is endemic in 72 countries in the tropics and sub-tropics where it is causing untold human suffering. About 1.4 billion of the populations in LF endemic areas are at risk of infection [1]. Africa accounts for approximately 30% of the global burden of the disease, with 405.9 million people at risk of infection in 39 of its 46 member countries [2]. In West Africa, the distribution of the disease is focal; with prevalence ranging from 3% to 12% in the southern sector and about 30% in the northern sector [3]. In Ghana, LF is endemic in 74 administrative districts located in eight of the 10 regions of the country.

In 1995, the World Health Organization (WHO) ranked the disease as the second leading cause of long-term chronic disability worldwide [4]. This led to the passing of Resolution 50.29 by the World Health Assembly (WHA 50.29) calling for the elimination of LF as a public health problem because it was recognized as one of the potentially eradicable diseases in the World. As a follow-up to this resolution, the Global Programme to Eliminate Lymphatic Filariasis (GPELF) was initiated by the World Health Organization. The central strategy of the GPELF is Mass Drug Administration (MDA) of anti-filarial medication to reduce the prevalence of microfilaria to below one percent in endemic communities [5-7].

To achieve elimination within four to six years it is required that at least 65% of the at-risk population should receive and swallow the recommended medication (albendazole/ivermectin or albendazole/diethyl carbamazine) under Directly Observed Therapy (DOT).

Implementation of MDA requires cooperation and coordination of activities by donors, national and local health officials, Non-governmental Organizations (NGOs) and communities.

Ghana was one of the first West African countries to initiate the MDA programme in the year 2000 using albendazole and ivermectin. The community-based distributor concept was adopted, starting with 5 districts (Ahanta West, Awutu Effutu Senya, Kassena Nankana, Sissala and Builsa) [8] and up-scaling gradually to 61 districts by 2006. The aim was to achieve elimination by 2015. Presently the programme has successfully completed ten annual rounds of MDA with varying degrees of success [9].

The MDA programme after 4-6 rounds with high coverage of  $\geq 80\%$  is expected to reach the elimination stage where the prevalence of infection falls below 1% [10]. Ahanta West District where this study was undertaken currently has microfilaria prevalence of 2.6% after 10 annual rounds of the MDA [11]. It is acknowledged that the effectiveness of MDA in reducing microfilaria prevalence and density in the blood is directly related to the proportion of the population that

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takes the medicines every year [2]. There are also reports that disparities do exist between coverage rates reported by drug distributors for MDA programmes and independent surveys conducted in endemic communities [12,13]. The objective of our study therefore was to explore the level of compliance to the programme by the people of Ahanta West District and also estimate coverage during the 2012 MDA programme year.

## Methods

### Study location

The study was conducted in the Ahanta West District of the Western region of Ghana. For effective health administration, the district has been divided into four sub-districts namely Agona-Nkwanta, Apowa, Dixcove and Princess. The district has a total population of 106,215 [14]. The annual rainfall in the area is about 1,700 mm. The Ahanta West district was one of the endemic districts where the mass drug administration was started in Ghana and had a microfilaria prevalence of 23.7% at the start of the programme. Currently there are 152 active community-based volunteers in the district who distribute the drugs. Eligible community members are treated with single doses of two medicines administered together: albendazole (400 mg) plus ivermectin (150-200 mg/kg) once yearly under DOT [15].

### Study design

A population-based cross-sectional study was conducted shortly after the MDA exercise of March, 2012. A household survey was undertaken during which data were collected from the head or any responsible adult ( $\geq 18$  years) of the household using a pre-tested questionnaire. The 109 communities in the district were divided into five sections (East, West, Central, North and South) according to their location on the district map after which three communities were randomly selected from each section. Thus a total of 15 communities were randomly selected from the district. Households were randomly selected using a random list generated from the total number of households in the fifteen selected communities. Data were then collected on all eligible individuals through the household head.

### Study population

The 15 selected communities had a total population of 1,644 people based on a household survey conducted at the time of the study. All persons aged 4 years and above resident in the selected communities (Cape 3 points, Akwidaa Akyinim, Nkwantasia, Ketakor, Domeabra, Kwamekrom, Yarkor, Adjumako, Boekrom, Sankor, Aboade, Gyabenkrom, Ahuntumano, Ellabankata and Butre) during the 2012 MDA programme period were eligible to participate in the study. Pregnant women, children less than 4 years, persons who were seriously sick during the period of drug distribution and lactating mothers in the first week after birth were excluded from the study using the WHO exclusion criteria.

### Sample Size Determination

The sample size was calculated based on the assumption that 65% of the population were aware of the MDA programme and took the drugs. The minimum sample size (n) was calculated using the formula:  $n = (Z_{\alpha/2})^2 * (p*q) / d^2$  [16] where:  $Z_{\alpha/2}$  is the Confidence level at 95% = 1.96, p is the coverage, q is (1-p) and d is the level of precision. Here p was taken as 65% and d as 5%. Thus the total number of household heads required for the study was 384. The average number of persons per household was estimated from the 2012 household census to be four

making the total number of expected individuals in the 384 households 1,536. A 10% of households were added to the calculated sample size to take care of non-response. The total number of households per selected community was calculated proportionate to the number of households.

### Data Collection Procedures

The data collection was done very early in the morning and in the evenings since most of the respondents were farmers and fishermen. A standard questionnaire [10] on monitoring MDA coverage was used. The household survey form was an interviewer-administered questionnaire consisting of partially categorised questions. The questionnaire was administered to the household head or any responsible adult in the household who was present during the drug distribution. The questions were explained in the local language for those who do not speak English.

Data collected included: socio-demographic (age, sex, highest educational level and occupation), mass drug administration programme (whether the drug distributor visited the household, direct observation was done on swallowing of the drugs, follow-up visits on absentees, reasons for taking or not taking or swallowing the drugs) and knowledge about the MDA programme (knowledge of those supposed to take the drugs, the treatment for LF, purpose of the drug distribution and their risk perception). Data on the reported coverage in the 2012 MDA programme was collected from the district and compared with the surveyed coverage.

### Data Processing and Analysis

The data collected were edited, coded and cleaned by running frequencies. The pre-coded questionnaires were serialised at the time of data entry and entered in SPSS version 16.0 after it had been checked for completeness. Data analysis was performed using Stata Corp Stata 10 (TX, USA). Compliance was calculated as: Total number of individuals identified by household survey as having ingested the drugs divided by Total number of individuals identified by household survey on which information on drug ingestion could be elicited multiplied by 100. Logistic regression was used to investigate the independent effect of potential risk factors (sex, highest educational level, occupation, one's risk perception, reasons for being or not being at risk of LF, reasons for liking or disliking the MDA programme, LF disease status and receiving advice on the management of elephantiasis) on the odds of receiving the drugs. For potential risk factors with more than two levels, one of the levels was chosen as the baseline. The Likelihood Ratio Test (LRT) was used to determine whether each covariate is an independent risk factor for the compliance. Thus variables were then excluded from further analysis (multivariate analysis) if the P-value for the LRT was more than 0.1 and provided that removal did not change the coefficients of variables in the model by more than 10%. Highest educational level, occupation, one's risk perception, reasons for being or not being at risk of LF, reasons for liking or disliking the MDA programme, LF disease status and receiving advice on the management of elephantiasis were all included in the multivariate analysis.

### Ethical Consideration

Ethical clearance was granted by the Ghana Health Service Ethical review board (Ref. No. GHS-ERC: 42/03/12.). Permission was also granted by the District Health Management Team (DHMT) and the coordinator of the MDA programme in Ahanta West district. Permission was also given by the chiefs and elders in the communities where the study was conducted. The study was explained to the participants in their own native language. A written informed consent was also

obtained from each study participant before enrolment into the study. Those who agreed to participate were administered the questionnaire if they satisfied the inclusion criteria and participation was voluntary. All responses obtained were kept confidential.

## Results

### Background of study participants

A total of 1644 people were expected from the 384 surveyed households to participate in the 2012 Mass Drug Administration (MDA) exercise. However, 107 (6.5%) of them could not be given the drugs as they were not eligible at the time of the exercise (seriously ill = 4; pregnant = 13; height < 94 cm = 90). Thus 1537 people were eligible to take the drugs. The mean age of the study eligible people was 25 years ± 17 (range: 4-105 years). Most of them, 57.8% (889/1537) were females. The dominant age group was 10-19 years (29.5%) with two-thirds 1031 (67.2%) of the respondents below the age of 30 years (Table 1). Respondents were predominantly in-school (43.8%) whilst farming was the major occupation (31%).

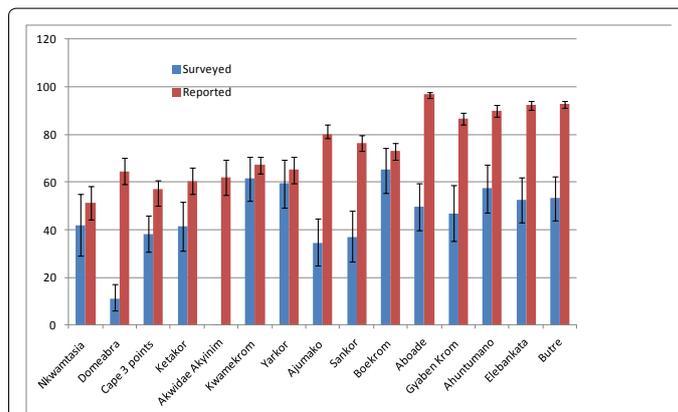
### Receipt and intake of anti-filarial drugs

The household survey revealed that only 673 out of the 1537 (43.8%, CI: 41.3-46.3) eligible population received the drugs. In one community (Akwidae Akyinim) no drug distribution took place according to the household heads. Generally, the surveyed compliance for the various

Characteristics	Received drug Frequency (%)	Did not receive drug Frequency (%)	Total (%)
<b>Sex</b>			
Male	286(44.1)	362(55.9)	648(42.2)
Female	387(43.5)	502(56.5)	889(57.8)
<b>Age</b>			
4-9	148(52.5)	134(47.5)	282(18.4)
10-19	208(45.9)	245(54.1)	453(29.5)
20-29	108(36.5)	188(63.5)	296(19.3)
30-39	77(41.0)	111(59.0)	188(12.2)
40-49	69(41.3)	98(58.7)	167(10.9)
50-59	37(44.6)	46(55.4)	83(5.4)
60+	26(38.2)	42(61.8)	68(4.4)
<b>Occupation</b>			
Fisherman	6(40.0)	9(60.0)	15(1.0)
Farmer	171(35.9)	305(64.1)	476(31.0)
Trader	81(40.9)	117(59.1)	198(12.9)
Teacher	7(77.8)	2(22.2)	9(0.6)
In school	319(47.4)	354(52.6)	673(43.8)
Artisan	53(55.2)	43(44.8)	96(6.3)
Unemployed	36(51.4)	34(48.6)	70(4.6)
<b>Highest educational level</b>			
No formal education	151(35.4)	276(64.6)	427(27.8)
Primary	307(43.8)	394(56.2)	701(45.6)
Middle/JHS	192(51.9)	178(48.1)	370(24.1)
SSS/SHS	16(64.0)	9(36.0)	25(1.6)
Tertiary	7(50.0)	7(50.0)	14(0.9)
<b>Total</b>	<b>673(43.8%)</b>	<b>864(56.2%)</b>	<b>1537 C.I.(41.3-46.3)</b>

Note: Mean age of respondents was 25 (S.D. 16.5); JHS = Junior High School; SSS = Senior Secondary School; SHS = Senior High School; Tertiary = Post Secondary Level

**Table 1:** Socio-demographic characteristics of respondents in relation to participation in the 2012 Mass Drug Administration programme in Ahanta West District, Ghana (N=1537).



**Figure 1:** Surveyed and Reported Coverage of MDA in 2012 in Ahanta West District, Ghana. The points plotted indicate the percentage coverage by independent survey or reported survey, while the vertical lines show the corresponding 95% confidence intervals.

communities did not compare favourably with that reported by the drug distributors (Figure 1). For 12 out of the 15 communities, the surveyed data revealed significantly lower compliance level compared to that reported by the drug distributors. Ajumako community had the highest surveyed compliance (65.1%, CI: 55.2-74.1) with Akwidae Akyinim community having the lowest (0%). Majority of the farmers did not receive the drugs as compared with other occupations. Similarly, most of the people with no formal education did not take the drugs (Table 2).

### Factors associated with drug intake

A test of the strength of association of the socio-demographic characteristics of the respondents using a univariate model showed that there was strong evidence of association between age, level of education, occupation and drug intake ( $p < 0.05$ ). Those with no formal education were about 30% less likely to receive the drugs than those with primary education (CI: 0.55-0.90). Most of those in the other age groups were less likely to receive the drugs compared to those aged 4-9 years.

Respondents received the drugs for various reasons. Majority of them (320/673, 47.5%) did so because they were free of charge ( $p < 0.0001$ ) with only 24.7% of those who received the drugs indicating that the drugs were to protect them from developing elephantiasis. Also, most of those who received the drugs (23.6%) said they like the MDA programme because the drugs protect them from lice.

Based on the household coverage survey, 56.2% (864/1537) of the eligible people did not receive the drugs during the 2012 MDA exercise; the main reason being that the drug distributors did not visit their homes (31.8%, 275/864). Some of the respondents (18.2%) were also either absent from their homes on the day of the MDA or at the time of the drug distributors' visit. For these people, no drugs were left behind for them. No revisits were also made to those houses. The study further observed that a large number of respondents refused to collect the drugs (299/864, 34.6%). A probe revealed that most of those who refused the drugs (293/299; 98%) did so because they do not like the side effects. A few also complained that the distributors did not give some members of their family (12.5%) because their names were not in the register. There was a strong evidence of association between dislike for the side effects of the drugs and drug intake ( $p < 0.0001$ ) (Table 3).

In terms of risk perception, majority of the respondents indicated that they were not at risk of elephantiasis (67%, 1029/1537). Of these 51.6% believed that they were not at risk because none of their family

Factors N=1537	Recipient/Non recipient	Crude	
		OR (95% CI.)	LR P-value
<b>Sex</b>			
Male†	286/362	1.00 (Ref)	
Female	387/502	0.98 (0.80-1.20) ‡	0.814
<b>Occupation</b>			
Fisherman†	6/9	1.00 (Ref)	
Farmer	17/305	0.84 (0.29-2.40) ‡	
Trader	81/117	1.03 (0.36-3.03) ‡	
Teacher	7/2	5.25 (1.80-34.4)	0.0001*
In school	319/354	1.35 (0.48-3.84) ‡	
Artisan	53/43	1.84 (0.61-5.60) ‡	
Unemployed	36/34	1.59 (0.51-4.94) ‡	
<b>Highest educational level</b>			
Primary†	307/394	1.00 (Ref)	
Middle/JHS	192/178	1.38 (1.08-1.78)	
SSS/SHS	16/9	2.28 (0.99-5.23) ‡	<0.0001*
Tertiary	7/7	1.28 (0.45-3.70) ‡	
No formal education	151/276	0.70 (0.55-0.90)	
<b>Age</b>			
4-9†	148/134	1.00 (Ref)	
10-19	208/245	0.77 (0.57-1.04) ‡	
20-29	108/188	0.53 (0.37-0.74)	
30-39	77/111	0.63 (0.44-0.92)	0.007*
40-49	69/98	0.64 (0.44-0.94)	
50-59	37/46	0.71 (0.45-1.20) ‡	
60+	26/42	0.56 (0.33-0.97)	

\*Strong evidence of association with the coverage

† Reference group

**Table 2:** Logistic regression of perceived socio-demographic factors influencing the 2012 MDA coverage among study participants in Ahanta West district.

members has the disease. Only a few respondents (10.4%) indicated they were not at risk because they had consumed the drugs. The odds of receiving the drugs for those who thought they were not at risk of the disease were 66% lower than those who thought they were at risk. Thus respondents perception of not being at risk of the disease for various reasons was strongly associated with non receipt of the drugs ( $P < 0.0001$ ) (Table 3).

Multivariate logistic regression analysis which adjusted for the effects of all the possible risk factors which were significantly associated after univariate analysis found educational level, drug side effects, drug protecting from lice infestation and absence of disease in family, to be independently associated with the drug intake (Table 4). Those in the Middle/ Junior High School were 1.49 times as likely to receive the drugs as those with Primary education (CI: 1.05-2.11). Respondents who disliked the MDA programme because of the drug side effects were 6 times less likely to receive the drugs. (OR= 5.67 95% CI: 4.45 – 7.21, p-value < 0.0001). Those who thought they were not at risk and also reasoned the disease was not in their family were also less likely to receive the drugs ( $p < 0.0001$ ) (Table 4).

### Mode of drug distribution

One hundred and fifteen (115) out of the total 123 registered community-based volunteers participated in distributing the drugs during the 2012 MDA exercise. The study revealed that of the 673 respondents who received the drugs, 97.2% received them in their homes while 2.8% collected them at a central point. The study further observed that all those who received the drugs consumed them with 94.9% under directly observed treatment (DOT).

## Discussion

The current study was conducted in 15 communities in the Ahanta West District of Ghana to determine the level of compliance to the Mass Drug Administration (MDA) programme for the control of Lymphatic Filariasis (LF) by the inhabitants of the district and also estimate reported coverage during the 2012 MDA programme year. Many more females were recorded from the surveyed households as there were generally more females in the population as reported by the 2010 Population and Housing Census [14]. However, the proportion of females to males who received the drugs was similar as reported by Nujum in a similar study in the Kerala district of India [12]. Also, the high proportion of persons aged < 20 years and low proportion of those 50+ years recorded in this study reflect the population profile of the district [14].

The study revealed that only 43.8% of the eligible population received and swallowed the drugs even though records submitted

Factors	Recipient/Non recipient	Crude	
		OR (95% CI.)	LR P-value
<b>Risk perception, N=1537</b>			
At risk of disease†	53/28	1.00 (Ref)	
Not at risk of disease	402/627	0.34 (0.21-0.54)	<0.0001
Do not know cause of disease	218/209	0.55 (0.33-0.90)	0.018
<b>Reasons for not being at risk of LF, N=1029</b>			
Received drugs†	107/1	1.00 (Ref)	<0.0001
Take care of myself	43/52	0.01 (0.00-0.60)	
Disease for those in the coast	72/81	01.00 (0.00-3.03)	
Disease is spiritual	1/9	0.001 (0.00-0.02)	
God takes care of me	40/94	0.004 (0.00-0.30)	
Disease not in my family	139/390	0.003 (0.00-0.20)	
<b>Reasons for being at risk of LF, N=81</b>			
Did not receive drugs†	1/3	1.00 (Ref)	
Have the disease in my family	5/1	15 (0.66-339.00) ‡	
Disease is unpredictable	42/23	5.48 (1.54-55.72)	0.0003
Walk barefooted	5/1	15 (0.66-339.54) ‡	
<b>Reasons for liking the MDA programme, N=1537</b>			
Received other information†	37/1	1.00 (Ref)	
House to house drug distribution	12/1	0.32 (0.02-5.59) ‡	
Drug protect from lice	363/79	0.12 (0.17-0.92)	<0.0001
Drugs are free	246/4	1.66 (0.18-15.28) ‡	
Do not like anything about it	15/799	0.0005 (0.00007-0.004)	
<b>Reasons for disliking the MDA programme, N=1537</b>			
Did not give members of my family†	56/136	1.00 (Ref)	
Drug side effects	323/727	5.14(4.16-6.36)	<0.0001
Like everything	294/1		
<b>LF disease status, N=1537</b>			
Have elephantiasis†	14/5	1.00 (Ref)	
Do not have elephantiasis	659/859	0.27 (0.10-0.76)	0.008
<b>Management of LF disease, N=19</b>			
Did not receive advice†	4/2	1.00 (Ref)	
Received advice on elephantiasis care	9/4	0.50 (0.28-0.92)	0.016

† Reference group

**Table 3:** Logistic regression of perceived factors influencing the 2012 MDA coverage among study participants in Ahanta West district.

Factors	Adjusted OR (95% CI.)	LR P-value
<b>Highest educational level</b>		
Primary†	1.00 (Ref)	
Middle/JHS	1.49 (1.05-2.11)	
SSS/SHS	2.30 (0.85-6.24)	0.010
Tertiary	1.19 (0.32-4.36)	
No formal education	0.58 (0.40-0.83)	
<b>Other factors</b>		
Drug side effects	5.67 (4.45 – 7.21)	<0.0001
Drug protect from lice	0.75 (0.62 – 0.89)	0.001
Disease not in my family	0.72 (0.67 – 0.78)	<0.0001
Not at risk of disease	0.26 (0.15 – 0.45)	<0.0001
Management for elephantiasis	0.23 (0.12 – 0.42)	<0.0001

† Reference group

**Table 4:** Multiple logistic regression of perceived factors influencing the 2012 MDA coverage among study participants in Ahanta West district.

from the district to the programme office at the national headquarters indicated that 83.6% of the people received the drugs during the exercise. Several factors including drug distributors not visiting some homes, not making revisits when some members are absent, absence of names of some eligible people in the registers and drug side effects were identified as probable factors that contributed to the low level of compliance. These factors have been identified in other studies which used community-based distributors in MDA for LF elimination (using ivermectin/albendazole or DEC/albendazole) to have contributed to low compliance [13,17-22]. In a study by Babu and Kar in India [19] the main reason for community members not receiving the drugs was found to be the fact that drug distributors did not visit the households of some eligible people.

The wide disparity between the proportion of people who took the drugs as captured during our survey and that reported by the drug distributors (43.8% vs 83.6%) could be as a result of poor supervision of the volunteers by officials of the Ghana Health Service and lack of motivation to continue providing voluntary service to the community. Such differences in surveyed and reported coverage rates have been documented in studies conducted in other endemic countries where volunteers are used for drug distribution [13,19,21]. The success of the MDA programme is highly dependent on these Community volunteers thus they should be given much attention. This can be improved through effective monitoring of the distribution process by the health authorities, quality control and the provision of incentives to the volunteers.

Studies have also shown that community members feel more comfortable receiving and swallowing drugs from people they know and come from their own communities [14,23,24]. It was not surprising therefore that in one of our studied communities (Akwidie Akyinim) no drug distribution took place at all. This community had no volunteer of its own but was to be served by a volunteer from a nearby community.

It is worth noting that only a small proportion of the community members took the drugs based on perceived benefits of the programme (prevention of elephantiasis) with the majority taking them because they were free of charge. These observations were contrary to reports from India and Haiti [22,25] where majority (85%) of those who took the drugs said it was because it protects them from getting elephantiasis. One important finding from this study was that community members have associated the drugs with protecting them against head lice infestation. Ivermectin is known to have a broad spectrum anti

parasitic effect and the topical application of its lotion has recently been reported to be efficacious against head lice [26,27]. Such benefits can be highlighted in educational campaigns to increase compliance in the district.

Almost all the respondents did not know that at some stage of the disease, one may not show the obvious signs of elephantiasis or hydrocele. Majority were therefore of the view that since nobody in their family had elephantiasis or hydrocele or they were not living along the coast they were not at risk of contracting the disease. This lack of knowledge may have influenced their health-seeking behaviour and therefore the low level of compliance to the programme.

Our evaluation of the 2012 exercise showed that the educational level of the respondents positively influenced compliance with the MDA programme even after controlling for all other factors. This allows for the identification of key educational messages that can be incorporated into pre-MDA community-based educational campaigns to increase compliance. That is, one composite educational message may not be appropriate for the whole population, but messages should be developed with each identifiable group in mind.

In conclusion, this study has established that compliance with the MDA programme during the year 2012 was low with only 43.8% of eligible community members taking the drugs. Several probable factors were also identified including the fact that volunteers did not revisit homes in which some members were absent during the first visit and also most community members see themselves as not being at risk of infection. Some communities were also without their own community member being a drug distributor. As the programme has been ongoing for a long time now, volunteers may also be fatigued and therefore no longer putting in their best reflecting in no revisits being done. We therefore strongly recommend intensive health education campaigns prior to the start of the subsequent rounds of drug distribution and also some form of incentive packages for the volunteers. We do not think the attitude of volunteers towards the MDA programme is the same across all the districts of Ghana and therefore the discrepancies observed in the Ahanta West District may not exist in all districts of the country. Since the success of the MDA programme is highly dependent on these community volunteers a similar study in some other districts will serve a good course.

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