

**COMMUNITY COMPLIANCE TO INTERVENTIONS
FOR LYMPHATIC FILARIASIS ELIMINATION MORBIDITY
MANAGEMENT AND DISABILITY PREVENTION
IN KIBAHA DISTRICT, TANZANIA**

Franco Ngonya, (BSc)

**MSc (Parasitology and Medical Entomology) Dissertation
Muhimbili University of Health and Allied Sciences
October, 2019**

**Muhimbili University of Health and Allied Sciences
Department of Parasitology and Medical Entomology**



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By

Franco Ngonya, (BSc)

**A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree
of Master of Science (Parasitology and Medical Entomology) of**

**Muhimbili University of Health and Allied Sciences
October, 2019**

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences a dissertation entitled: **“Community compliance to interventions for lymphatic filariasis elimination morbidity management and disability prevention in Kibaha District, Tanzania.”**in (partial) fulfillment of the requirements for the degree of Master of Science (Parasitology and Medical Entomology) of Muhimbili University of Health and Allied Sciences.

Dr. Dinah B. Gasarasi

(Supervisor)

Date

DECLARATION

AND

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I, **Franco Ngonya**, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature..... **Date**.....

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Finally, I would like to appreciate the support and encouragement offered by my classmates during the study period.

DEDICATION

This dissertation is dedicated to all members of my family, especially my mother Tusajigwe Lilian Ngonya, and Tully Upendo Ngonya for their love and support throughout the entire period of my studies.

ABSTRACT

Background

Lymphatic filariasis (LF) is a neglected tropical disease caused by the filarial worms in the genus *Wuchereria bancrofti*, *Brugia malayi* and *B. timori*. The adult worms cause damage to the lymphatic system and can lead to abnormal enlargement of body parts, causing temporary or permanent disability. The national program for the elimination of lymphatic filariasis in Tanzania has been ongoing since the year 2000, through annual mass drug administration (MDA) of Ivermectin (IVM) and Albendazole (ALB). Another supplement intervention against LF is through mosquito control such as use of long-lasting insecticidal nets (LLINs) and to alleviate suffering and disability by introducing basic measures such as foot hygiene and hydrocelectomy. Whereas noncompliance to intervention programs has been recognized as one of the major factors that lead to persistence of transmission of LF there is paucity of information on the level of compliance in the endemic communities where persistence of transmission of lymphatic filariasis has been maintained. This study sought to assess the level of compliance with the identified interventions for LF elimination, morbidity management and disability prevention, vector control and the underlying reasons for community compliance and non-compliance to identified interventions.

Objective: To assess the level of compliance to identified interventions for the elimination and morbidity management and disability prevention for lymphatic filariasis in Kibaha district Tanzania.

Methodology

A cross-sectional study involving both quantitative and qualitative methods of data collection was carried out in two (2) study populations. The first study population included 395 standard one primary school children who never participated in MDA. These were tested for Circulating Filarial Antigen (CFA). The second population included 420 community members and people with hydrocele and elephantiasis aged 15 years and above who are eligible for participation in the MDA programs. The closed questionnaire interviews and Focus group discussions (FGDs) were used to assess compliance with interventions. The quantitative data

was organized to obtain proportions and their 95% CI; the association between variables were measured by the Chi-square test, bivariate and multivariate logistic regression at a significance level of 0.05. The qualitative data were organized in themes by content analysis.

Results

Out of 395 school children tested for the presence of circulating filarial antigen (CFA); the prevalence of CFA was found to be 0.3% indicating active transmission of filariasis. There was no association between duration of residence, gender, and age of the children with being infected. Out of 420 community members interviewed; the majority (89.5%) were found to be aware of LF-MDA program. There were significant associations between gender of individual and duration of residence in the village with the level of awareness of LF-MDA program (AOR=2.5, 95% CI= 1.4-5.0) and (AOR=2.9, 95% CI= 1.4-5.8) respectively. Most of the participants (99.3%) were found to be aware of mosquito control interventions. However, there were significant associations between gender of the individual and age of individual with the level of awareness to mosquito interventions ($\chi^2=4.44$;df=1 p=0.035) and ($\chi^2=12.668$; p=0.015) respectively. Moreover, the majority were found to have participated in LF-MDA and regularly had usage of LLINs, 76%, and 78.3% respectively. Gender and duration of residence were found to be significantly associated with participation in LF-MDA (AOR=2.2, 95% CI= 1.4-3.3) and (AOR=2.3, 95% CI= 1.4-4.0) respectively. Most of the respondents were found to have heard about hydrocelectomy and/or foot hygiene practices. However, the majority reported to have never participated in the hydrocelectomy campaign while most of the respondents with lymphoedema practice foot hygiene interventions.

Conclusion: Majority of individuals in the study area have shown that they participate or comply with possible LF interventions to disrupt transmission. However there are a few individuals who are non-compliant. Moreover, knowledge of disease and benefits of possible interventions were shown to be determinants of noncompliance to interventions.

Recommendation: Health education on knowledge of the disease and benefits of possible interventions should be emphasized.

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ACRONYMS/ABBREVIATIONS

ALB	Albendazole
BEPs	Bacteria entry points
CM's	Community members
CI	Confidence interval
DC	District Council
FGDs	Focus group discussions
GPELF	Global Programme to Eliminate Lymphatic Filariasis
IVM	Ivermectin
LF	Lymphatic filariasis
LLINs	Long-lasting insecticidal nets
MDA	Mass drug administration
MSc	Master of Science
MUHAS	Muhimbili University of Health and Allied Sciences
NBS	National Bureau of Statistics
NIMR	National Institute for Medical Research
TNLFEP	Tanzanian National Lymphatic Filariasis Elimination Programme
NTDs	Neglected Tropical Diseases
NTDCP	Neglected Tropical Disease Control Programme
SPSS	Statistical Package for the Social Sciences
TSh	Tanzania Shillings
WHO	World Health Organization

DEFINITIONS OF TERMS

Awareness refers to the ability to directly know and perceive, to feel, or to be cognizant.

Control refers to a reduction of prevalence, incidence, and morbidity of diseases as a result of interventions.

Compliance refers to the act of obeying an order, rule, or request.

Compliance to MDA refers to the percentage of a targeted population who swallow the medications when exposed to medication.

Compliance to morbidity management refers to the percentage of a targeted population who adhere with treatment regardless if offered or not.

Compliance to mosquito intervention refers to the percentage of a targeted population who utilize the mosquito control methods.

Elimination refers to the reduction of the incidence of lymphatic filariasis to zero cases in a certain geographical location, with low risk of reintroduction as a consequence of deliberate control interventions

Hydrocelectomy refers to surgical procedure to treat hydrocele, which is a buildup of fluid around a testicle.

Lymphatic filariasis is the filarial parasites disease caused by *Wuchereria bancrofti*, *Brugia malayi* and *B. timori* and transmitted by blood-feeding mosquitoes, including *Anopheles*, *Culex*, *Aedes*, and *Mansonia*. It cause damage to the lymphatic system and can lead to abnormal enlargement of body parts, causing temporary or permanent disability.

Mass drug administration (MDA) refers to the treatment of the whole population or section of the population at higher risk whether symptoms are present or absent. The aim of MDA is to reduce or interrupt transmission of the disease.

Morbidity management refers to the treatment of the disease manifestation by introducing basic measures, such as improved hygiene and skin care (foot hygiene) and by providing surgery for men with hydrocele.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Lymphatic filariasis (LF) is a neglected tropical disease caused by the filarial parasites namely *Wuchereria bancrofti*, *B. malayi* and *B. timori*. They are transmitted from one host to another by different types of blood-feeding mosquitoes, including *Anopheles*, *Culex*, *Aedes*, and *Mansonia* (Bockarie *et al.*, 2009). The adult worms reside and cause damage to the lymphatic system and can lead to abnormal enlargement of body parts, causing temporary or permanent disability. All ages are affected but in childhood the manifestation of clinical disease is unnoticeable, only to occur later in life (WHO, 2018). Globally 120 million people are estimated to be infected with the parasite and almost one billion are at risk of infection (WHO, 2005). The clinical manifestations of the disease include lymphoedema, and elephantiasis of the extremities, hydrocele, and elephantiasis of the scrotum and occasionally, chyluria, and attacks of acute adenolymphangitis (Gasarasi *et al.*, 2000).

In the year 2000, the Global Programme to Eliminate Lymphatic Filariasis (GPELF) was established with the goal of eliminating LF worldwide by 2020 (WHO, 2018). The World Health Organization's (WHO) strategy is founded on two key components. The program is focused on those endemic communities who are at risk through giving annual mass drug administration (MDA) with a combination of albendazole plus either diethylcarbamazine (DEC) or ivermectin. These combinations of the drugs show the effectiveness and are efficient in reducing the microfilariae loads in the blood and is therefore a good tool to prevent transmission of LF and also of significance, they kill other intestinal helminths (Boyd *et al.*, 2010; Mwakitalu *et al.*, 2013). The second key component is to alleviate suffering and disability by introducing basic measures, such as improved hygiene and skin care (foot hygiene), for those with lymphedema and by providing surgery for men with hydrocele (hydrocelectomy). Mosquito control (vector control) is a supplemental strategy supported by WHO. It is used to reduce transmission of lymphatic filariasis and other mosquito-borne infections such as malaria. Depending on the parasite-vector species, measures such as

insecticide-treated nets, indoor residual spraying or personal protection measures may help protect people from infection (WHO, 2018).

Tanzania is among Sub-Saharan African countries; with an estimated, 34 million people at risk of infection and 6 million people are affected by one kind of lymphatic filarial nematode *Wuchereria Bancrofti* (Simonsen *et al.*, 2013). The transmission in the region is facilitated by *Anopheles gambiae* complex, *Anopheles funestus* group and *Culex quinquefasciatus* which have been recognized as important filarial vectors in Tanzania (Rwegoshora *et al.*, 2005; Bockarie *et al.*, 2009). There are several studies which indicate that the disease prevalence was particularly high along the coast of the Indian Ocean prior to the initiation of the National Lymphatic Filariasis Elimination program (Mwakitalu *et al.*, 2013). The endemicity varied from highly endemic along the coast with proportions of CFA positive individuals being 45–60%, low endemicity in the areas of Western Tanzania with 2–4% of population being CFA positive (Malecela *et al.*, 2009).

Tanzanian National Lymphatic Filariasis Elimination Programme (NLFEP) was launched in the year 2000 with the goal to initiate the implementation of LF control by giving all individuals aged 5 years and above who are at risk, annual MDA with a combination of albendazole (400 mg) and ivermectin (150–200 mg/kg) (Malecela *et al.*, 2009). In 2000, the NLFEP conducted the first MDA campaign in Mafia District, in which 45,000 people were given chemotherapy (Malecela *et al.*, 2009). The MDA program which is designed to interrupt transmission has been expanded to cover 17 of 25 regions in Tanzania mainland (Kisoka *et al.*, 2014). According to Tanzania lymphatic filariasis elimination updates in February 2018, 121 endemic districts were identified, 97 have achieved criteria for stopping MDA activities and in 27 districts MDA is still in progress. In 2017 persistent hot spots were identified where transmission is still ongoing. These included Mafia, Kibaha, Lindi, Kilwa, Masasi and Mtwara districts which had circulating filarial antigen (CFA) prevalence of 4.5%, 4.1%, 7.5%, 4.1%, 6.9%, and 7.3%, respectively (NTDCP, 2018). Several studies have identified the reasons for persistent endemicity in the area, including; the initial prevalence of infection, initial intensity of transmission, the efficacy of medicines, MDA drug regimen and

compliance (Biritwum *et al.*, 2016). Apart from other factors that determine the success of large scale control/ elimination programs, is effective drug distribution and good compliance (Sunish *et al.*, 2013). Other studies in Tanzania and Samoa identified the reason for persistent microfilariae (mf) prevalence; included poor coverage and persistent noncompliance with control programs (Jones *et al.*, 2015; Biritwum *et al.*, 2016). When a large proportion of the population is not involved or rejects involvement in intervention program such as MDA a potential reservoir for the parasite is left untreated, thus opening the door to recrudescence of transmission (Kisoka *et al.*, 2016). This study was therefore designed to find out the reasons for the persistence of transmission and determine the proportion of community compliance to LF interventions.

1.2 Problem statement

LF remains a public health concern in some coastal districts of Tanzania. It has been shown that there was a persistence of transmission of LF despite the efforts that had been made to disrupt the transmission through annual mass drug administration of ivermectin and albendazole, and other interventions such as morbidity management and mosquito control. Whereas compliance to intervention programs has been recognized as one of the major factors that lead to persistence of transmission of LF, there was a paucity of information on the level of compliance in the endemic communities where the persistence of transmission of lymphatic filariasis had been maintained. This study, therefore, was designed to assess the level of compliance to the identified interventions for LF elimination and morbidity management and the underlying reasons for community compliance and non-compliance in Kibaha district Tanzania, where there was persistent transmission with a CFA prevalence of 4.1%, despite 14 rounds of MDA with Ivermectin and Albendazole, distribution of long-lasting insecticide-treated nets by the malaria control program and the morbidity alleviation interventions.

1.3 Conceptual framework

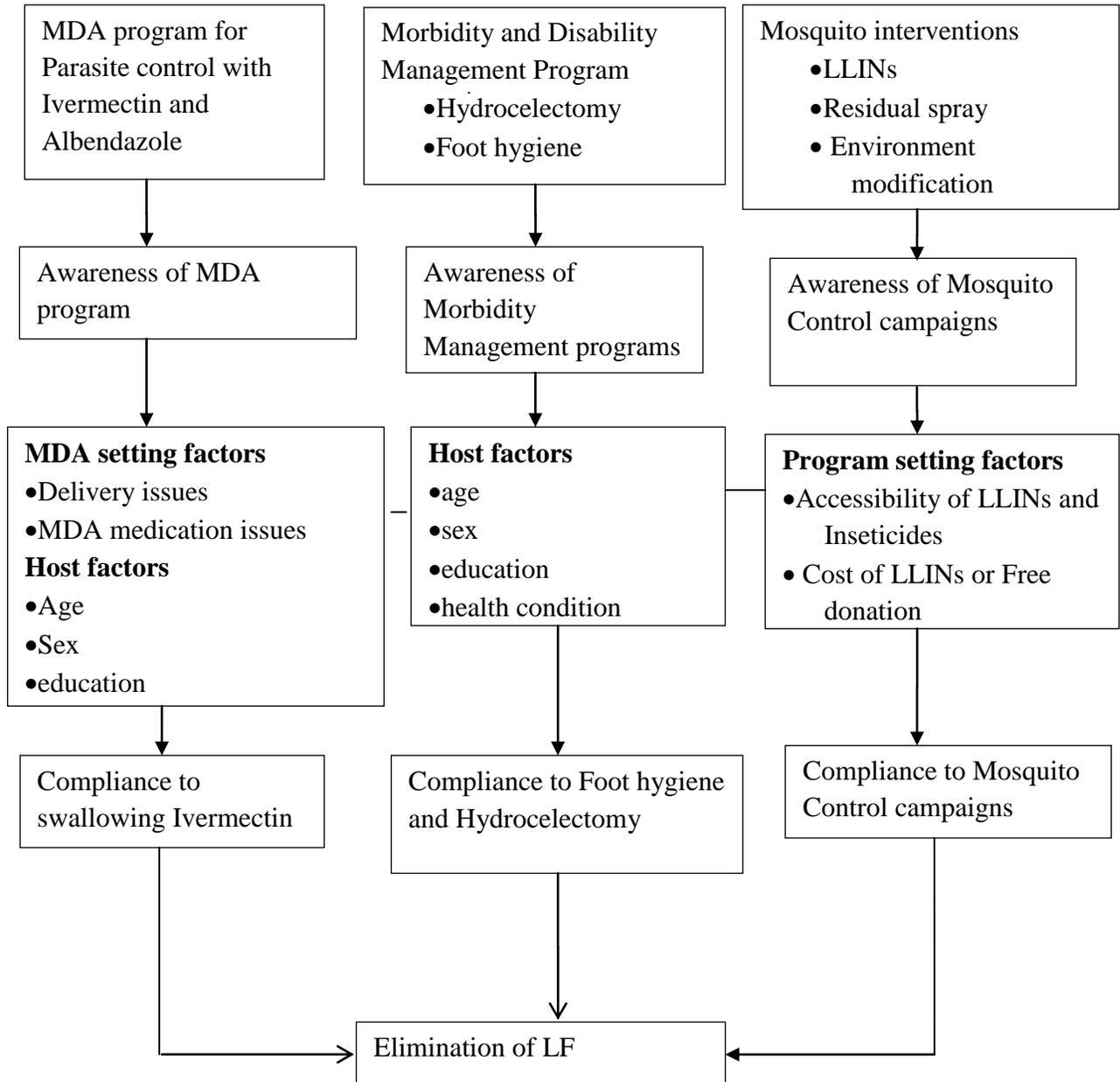


Figure 1: A conceptual framework for investigating community compliance to interventions for thymphatic filariasis elimination and morbidity management.

1.3.1 Description of a conceptual framework

The framework shows that the elimination of LF is influenced by awareness of LF intervention, and compliance to interventions such as MDA and mosquito control campaign (Figure 1).

Level of community awareness towards LF elimination programs influences the adherence of community members to control and prevention programs of disease, for example, the low level of community awareness of LF intervention programs lead to non-adherence of community members in control and prevention of disease.

The underlying reason of community compliance to identified interventions is influenced by awareness of possible intervention. Hence the reason for compliance affects the proportion of community compliance to the possible intervention.

The level of community compliance to morbidity management is influenced by the level of awareness towards the existence of morbidity management program. Also the proportion of community member who complies with morbidity management affects the proportion of community compliance to MDA and mosquito control interventions. For example, a high number of community members participate in morbidity management is more likely to have a high number of community member who will participate in MDA and mosquito control programs.

The level of community compliance to MDA and mosquito control interventions affects the persistence of LF transmission as low proportion compliance to MDA and mosquito control interventions hence low chance of success of the control interventions results in the persistence of LF. Persistence of disease in the area delays success of elimination of the disease in the required time frame by 2020.

1.4 Research questions

1.4.1 Broad research question

What is the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district Tanzania?

1.4.2 Specific research questions

1. What is the current prevalence of Circulating Filarial antigens (CFA) of lymphatic filariasis in Kibaha district?
2. What is the level of community awareness on the LF elimination MDA program?
3. What is the community compliance status to the LF elimination MDA program?
4. What are the community awareness and compliance status in morbidity management interventions (hydrocoelelectomy and/ or foot hygiene) in Kibaha district?
5. What is the level of community awareness and compliance to mosquito control campaigns in Kibaha district?
6. What are the underlying reasons for community compliance and non-compliance to interventions for lymphatic filariasis elimination and morbidity control?

1.5 Research objectives

1.5.1 Broad objective

To assess the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district Tanzania.

1.5.2 Specific objectives

The specific objectives of the study were;

1. To determine the social demographic characteristics of the study population in selected wards in Kibaha district.
2. To determine the prevalence of CFA for lymphatic filariasis in standard one primary school children from selected wards in Kibaha district.
3. To determine the level of community awareness on the LF elimination MDA program in selected wards in Kibaha district.
4. To assess the level of community participation in LF elimination MDA program in selected wards in Kibaha district.
5. To assess the level of awareness and community compliance to morbidity management interventions (hydrocoelectomy and/or foot hygiene) in selected wards in Kibaha district.
6. To determine the level of awareness and community compliance to mosquito control interventions in selected wards in Kibaha district.
7. To explore the underlying reasons for community compliance to MDA with Ivermectin and supportive interventions of hydrocoelectomy, foot hygiene and use of insecticide-treated nets in selected wards in Kibaha district.

1.6 Rationale of the study

The findings from this study will help to provide information on the level of compliance to interventions for elimination of LF and morbidity management. They will help Policy and decision makers such as Government (Ministry of Health Community Development Gender Elderly and Children) and program managers and coordinators in the NTD programs to strengthen or modify the strategies for the elimination program. Additionally, this study will be crucial for those involved in the lymphatic filariasis elimination program and contribute to the resource of knowledge and efforts towards LF elimination.

CHAPTER TWO

2.0 LITERATURE REVIEW

The review covers the prevalence of lymphatic filariasis and transmission, community participation to the intervention of lymphatic elimination and morbidity management and community awareness on LF elimination MDA program, morbidity management, and mosquito control campaigns.

2.1 Prevalence of lymphatic filariasis and transmission

Human lymphatic filariasis (LF) is a disfiguring and disabling mosquito-borne parasitic disease. In Africa, where all LF is caused by the filarial nematode *Wuchereria bancrofti*, estimates indicate that more than 45 million people are affected (Hotez and Kamath, 2009). Tanzania ranks as the third African country in terms of highest LF burden, with over 34 million people living in endemic areas, and more than 6 million are infected (Kisoka *et al.*, 2014). Transmission of *W. bancrofti* to humans occurs when female mosquito vectors carrying infective larvae land on the human skin to take a blood meal. The larvae penetrate the skin and migrate to the lymphatic vessels where they develop into adult male and female worms over a period of several months. The mature fertilized female worms produce large numbers of tiny larvae called microfilariae (mf) which circulate in the blood. The mf are ingested by new mosquito vectors when taking a blood meal and develop into new infective larvae in the vectors in about 10–14 days (World Health Organization, 2013). The transmission in the region is facilitated by *Anopheles gambiae* complex, *Anopheles funestus* group and *Culex quinquefasciatus* which have been recognized as important filarial vectors in Tanzania (Rwegoshora *et al.*, 2005; (Bockarie *et al.*, 2009). Children are most susceptible to acquire infection because of lack of immunity and high exposure to infective larvae in an endemic region. These infections, established in childhood, may act as the reservoir for future disease later in life (Mandal, 2010). According to Tanzania lymphatic filariasis elimination updates in February 2018, 121 endemic districts identified, 97 have achieved criteria for stopping MDA activities and in 27 districts MDA is still in progress. In 2017 persistent hot

spots were identified where transmission was still ongoing. These include Mafia , Kibaha, Lindi, Kilwa, Masasi and Mtwara districts with circulating filarial antigen (CFA) prevalence of 4.5%, 4.1%, 7.5%, 4.1%, 6.9%, and 7.3%, respectively (NTDCP, 2018).

Jones, (2012) conducted a study on the prevalence of *W. bancrofti* among children of school age in Rufiji district, Tanzania. The result showed that 14.3% were positive with *W. bancrofti* antigen. Prevalence was very high in individuals not swallowing tablets as compared to those swallowing the tablets. The researchers concluded that community non-compliance to MDA is one of the factors associated with the sustained high prevalence. Poor knowledge on the disease transmission, cultural beliefs and drug distributors not following the protocols are also associated with the observed prevalence.

Simonsen *et al.*, (2014) conducted a study on LF control in Tanga region, Tanzania. The results showed a similar downward trend in LF transmission and human infection as previously reported for Tanga district with prevalence after MDA 8 decrease from baseline for CFA and mf in communities and also CFA in school children decrease from baseline. It was concluded that monitoring should continue to guide the program to ensure that the current major achievements will ultimately lead to successful LF elimination.

2.2 Community awareness on LF elimination MDA program, morbidity management, and mosquito control campaigns

According to study done by Silumbwe *et al.*, (2017) the main factors facilitating implementation of MDA for LF programmes were awareness creation through innovative community health education programmes, creation of partnerships and collaborations, integration with existing programmes, creation of morbidity management programmes, motivation of community drug distributors (CDDs) through incentives and training, and management of adverse effects. Morbidity management programs for lymphedema and hydrocele were reported to increase community support and hence participation in MDA for LF elimination (Sodahlon *et al.*, 2013a). Community knowledge of available care, including surgery for hydrocele patients, motivated people to participate in MDA for LF. Lymphedema

management programs also provided patients with a platform to share information with other community members about the disease and the benefits of the drugs (Silumbwe *et al.*, 2017).

Jones, (2012) the study indicated that there is a statistically significant relationship between the level of education and awareness of the MDA program and hence participation in the program. The majority of the respondents interviewed had heard of the disease but the transmission of the disease is only fairly understood by 57.3%, who reported that the transmission is through mosquitoes. The other participants seemed to have a misconception about the transmission of disease associating having sex with a woman during menstruation period and stepping in stagnant water causes the elephantiasis of the lower limbs. Knowing that mosquitoes are responsible for the transmission of LF was shown to be associated with compliance in several studies (Krentel *et al.*, 2013). The inverse of this was also observed when individuals did not comply because they were unaware of the MDA or the LF elimination program (Krentel, Fischer and Weil, 2013). The most common source of the population awareness of the MDA program message was the drug distributor (95.3%) followed by the radio networks (14.8%) Other IEC sources include newspapers, posters, banners, handbills, megaphone announcements (Sunish *et al.*, 2013).

2.3 Community participation in LF elimination program, morbidity management and mosquito control interventions

In the year 2000, the Global Programme to Eliminate Lymphatic Filariasis (GPELF) was established with the goal of eliminating LF worldwide by 2020. The World Health Organization's (WHO) strategy is founded on two key components. The program is focused on those endemic communities who are at risk through giving annual mass drug administration (MDA) with a combination of albendazole plus either diethylcarbamazine (DEC) or ivermectin. These combinations of the drugs show the effectiveness and are efficient in reducing the microfilariae loads in the blood, therefore a good tool to prevent transmission of LF and also of significance, they kill other intestinal helminths (Boyd *et al.*, 2010; Mwakitalu *et al.*, 2013). The second key component is to alleviate suffering and disability by introducing basic measures, such as improved hygiene and skin care (foot

hygiene), for those with lymphedema and by providing surgery for men with hydrocele (hydrocelectomy). Mosquito control (vector control) is a supplemental strategy supported by WHO. It is used to reduce transmission of lymphatic filariasis and other mosquito-borne infections such as malaria. Depending on the parasite-vector species, measures such as insecticide-treated nets, indoor residual spraying or personal protection measures may help protect people from infection (WHO, 2018). The Tanzania LF Elimination Programme has a number of strategies; these include MDA, lymphoedema management, hydrocelectomies, surgery for scrotal swellings caused by *W. bancrofti* and vector control through the use of bed nets and the reduction of mosquito breeding sites. Community participation plays an important role in MDA since the community is the main target in the elimination of LF due to the fact that the filarial worm such as *W. bancrofti* does not multiply freely in the environment and has no significant non-human vertebrate host that could serve as a reservoir for infection of humans (Ottesen, 2009).

A study done by Jones, (2012) revealed that majority of the respondents interviewed in Rufiji district had swallowed the anti-LF ivermectin and albendazole tablets only once. Reasons for participating were found to be resulting from the awareness of the program, people being afraid of getting infected with the disease, and protecting next generation while a minor proportion participated because they were infected by the disease. Also, another study done by (Krentel *et al.*, 2013) revealed the major factors that affect individual compliance with MDA for the elimination of lymphatic filariasis. These include MDA setting, awareness, and knowledge, drug distributor, recipient's personal situation, prior experience with MDA, fear of adverse events against benefit and confidence in MDA.

A study done by Budge *et al.*, (2013) revealed that the social demographic characteristics of participants in morbidity management, the majority were women, married participants, averaged 57 years of age and identified "Homemaker/Housekeeper" as their primary occupation. Also, results revealed consistence with other studies which have demonstrated decreased disability, fewer ADL episodes, and improved quality of life amongst lymphedema patients involved in lymphedema management programs.

A study by Narahari *et al.*, (2013) indicated that patients with large limbs, small limbs, history of inflammatory episodes and bacteria entry points (BEP), who complied with treatment showed decreases in severity disability. Other patients who did not comply with treatment did not show the successful decrease of disability at three months follow-up.

A study done by Makungu *et al.*, (2017) among the residents of Dar es Salaam revealed that the most used mosquito control method was bed nets. The uses of other mosquito control methods showed differences according to the wealth status of the place. Prevention methods such as slapping and covering up with clothing were most used in the least wealthy places while the most used protective methods against mosquito in wealthiest places were aerosol insecticide sprays, window screens, and fumigation.

2.4 Underlying reasons for community compliance to the LF elimination program, morbidity management, and mosquito control interventions

A study done by Babu and Kar (2004) in Orissa state of India revealed that majority of the people had received the drugs during MDA and had consumed them. The other people had not taken the tablets although they received them. The reasons given by respondents for not receiving drugs were health worker or drug distributor did not visit their family, absent at the time of distribution, felt unnecessary, fear of side-effects, underage, sick at the time of distribution and pregnant at the time of distribution. Reasons given by respondents for not consuming drugs were fear of side-effects, not in the village/away from the family, sick, felt unnecessary and pregnant during the program. It was concluded that it is essential to improve compliance in future rounds of MDA to achieve targets of control and eventual elimination of LF in a reasonable time frame.

Hussain *et al.* (2014) conducted a study on mass drug administration for lymphatic filariasis elimination in a coastal state of India. This study focused on barriers to coverage and compliance and the results showed that 99% of the study participants received DEC and ABZ tablets during MDA, of which only just above a quarter actually consumed the drugs. The reasons for non-compliance were mostly due to fear of side effects, lack of awareness of

the benefits of MDA, and non-attendance of health staff in the villages. Lack of adequate training of drug distributors and poor health communication activities before the MDA campaign commenced and the absence of follow-up by health workers following MDA were a few of the operational difficulties encountered during the MDA campaign. It was concluded that it is crucial to address the issues linked to low compliance to make the program more efficient and achieve the goal of filariasis elimination.

Kisoka *et al.*(2014) study indicated that main reasons given for not taking the drugs were absent during distribution, tablets not distributed, not informed about distribution, do not like about tablets, worried about side effects, don't think tablets are effective and have taken alcohol. It was concluded that drug uptake relied more on easily modifiable provider-related factors than on individual perceptions and practices in the target population. Limited investments in appropriate timing, dissemination of accurate timing information to recipients and motivation of drug distributors to visit all households (repeatedly when residents are absent) are likely to have considerable potential for increasing drug uptake, in support of successful elimination of LF transmission.

Budge *et al.*(2013)conducted a study onthe Impact of community-based lymphedema management on perceived disability among patients with lymphatic filariasis in Orissa State, India and results showed thatreasonsfor non-participation at any particular assessment were absence from the village at the time of the assessment (70%), refusal (7%), illness (6%), or death (17%).

Therefore the issues of awareness of MDA program and morbidity management showed that people were still not aware but people really understand disease dynamics. Compliance and participation toMDA program and morbidity management showed that people still not haveconsistent participation in the MDA program, morbidity management, and vector control campaigns. This study, therefore, was designed todetermine the proportion of community compliance to LF interventions.

CHAPTER THREE

3.0 MATERIALS AND METHODS

This section covers the details of the research methodology used in this study. It includes a study area, study design, study population, sample size estimation, sampling techniques, eligibility criteria, study variables, data collection techniques, data quality management, data processing and analysis, ethical consideration and studies limitations.

3.1 Study Area

The study was conducted in Kibaha district, which is among the 6 districts of the Pwani region, Tanzania (Figure 2). Kibaha district lies at a latitude of 6.7813°S and longitude of 38.9929°E. The district is bordered to the north by Bagamoyo district, to the East by Dar es Salaam region, to the south by the Kisarawe district and to the west by Morogoro Region.

The district has an area of 1,502 km² with approximately a population of 78,226 whereby females are 39,770 and males are 38,456 (NBS, 2017). The district has eleven (11) wards namely; Soga, Ruvu, Mlandizi, Magindu, Kwala, Kilangalanga, Kikongo, Janga, Gwata, Dutumi, and Bokomnemela. Kibaha has been reported among endemic coastal areas with the persistence of transmission of Lymphatic filariasis.



Figure 2: A map of Kibaha district

3.2 Study Design

A cross-sectional study was conducted involving both quantitative and qualitative methods of data collection in selected wards in Kibaha district. The first study population was standard one primary school children, who were involved in determining the prevalence of CFA. The second study population was community members aged 15 years and above and also people who have hydrocele, lymphedema, and elephantiasis were involved in assessing the level of compliance to identified interventions for lymphatic filariasis elimination, morbidity management and disability prevention.

3.3 Study Population

This study involved two study populations. The first study population included standard one primary school children (age 5-10 years). This was a population which has not participated in the MDA program despite eligibility criteria of the national MDA program where only those aged 5 years old and above participate. By detecting CFA in standard, one primary school children who were born during the MDA elimination program campaigns and never participated would be an indicator of continued LF transmission in the selected areas in Kibaha district.

The second population included community members aged 15 years and above and also people who have a hydrocele, lymphoedema, and elephantiasis from selected areas in Kibaha district. They provided information on the level of awareness and compliance with LF interventions such as MDA, morbidity management and vector control campaigns.

3.4 Sample size estimation

The study involved two different sample sizes as it involved two study populations. The sample sizes for the two study populations were calculated using the following formula:

$$n = \frac{z^2 P (100-P)}{\varepsilon^2}$$

3.4.1 Sample size estimation for standard one primary school children:

Whereby;

n = Minimum required a sample size

Z= Standard normal deviate of 1.96 on using a 95% confidence interval.

P = Prevalence of circulating filarial antigen (CFA) of 4.1%.

ϵ = Margin of error was 2.05% instead of 5% because of the value of P was less than the margin of error. So the value of P was divided by 2 to obtain the value of the margin of error “ ϵ ”

Hence, $n = \frac{1.96^2 \times 4.1 (100-4.1)}{2.05^2}$

n = 359

The sample size was adjusted for a 10% non-response rate as follows;

$n = 1/R \times 359$

$n = (10/100 \times 359) + 359$

n = 395

Therefore the sample size of the first population was 395 primary school children

3.4.2 Sample size estimation for members of the community

The same formula was used to compute sample size

P= 53% This is the proportion of compliance to previous MDAs 2011, according to a study done in Rufiji district (Jones *et al*, 2015)

ϵ = Margin of error was 5%

Z= Standard normal deviate of 1.96 on using a 95% confidence interval

Hence, $n = \frac{1.96^2 \times 53 (100-53)}{5^2}$

n = 382

The sample size was adjusted for a 10% non-response rate as follows;

$n = 1/R \times 359$

$n = (10/100 \times 382) + 382$

n= 420

Therefore the sample size for the second study population was 420 community members above 15 years of age.

3.5 Sampling Procedure

The sampling procedures used in this study were categorized into two in order to obtain two study populations.

3.5.1 First study population (standard one primary school children aged 5-10 years)

Simple random sampling was used to obtain four (4) Wards out of eleven (11) wards found in Kibaha district. Simple random sampling was undertaken to obtain two schools from each selected ward. Simple random sampling was used to obtain children whereas 395 standard one primary school children were recruited. With a lottery method, in each selected school, each standard one primary school child was assigned a number, after which numbers were selected randomly.

3.5.2 Second study population (members of the community above 15 years of age)

Grab sampling (convenient sampling) was used to obtain community members aged 15 years and above, who are eligible to participate in MDA program and morbidity management but not necessary that they participated in the area where the schools were found. Participants for FGDs were sampled purposively; 6-8 people were recruited for each of the two different focus group discussions. One of the FGDs included people with hydrocele and elephantiasis. It was a focus on determining their compliance or non-compliance with morbidity management and disability prevention interventions. Another FGDs was general community members aged 15 years and above that it focused on determining community compliance to the identified interventions for the LF elimination program and explore the reasons for either compliance or noncompliance.

3.6 Eligibility criteria

3.6.1 Inclusion criteria

The first study population included all standard one primary school children who have never participated in mass drug administration of Ivermectin and Albendazole. Those who were present at school on the day of data collection were included.

The second study population included all community members aged 15 years and above who were eligible to participate in MDA programs and also people who have hydrocele and elephantiasis.

3.6.2 Exclusion criteria

First study population; excluded all standard one primary school children who participated in last annual MDA programs and those who were ill.

Second study population; also excluded severely ill individuals and community members who are under 15 years of age.

3.7 Study Variables

3.7.1 Dependent variable

The dependent variable for this study was:

1. Prevalence of CFA. It was measured using Filariasis test strip which qualitatively detects the adult filarial circulating antigen (CFA).
2. Community compliance with MDA. It was measured through quantitative questionnaire interviews and FGDs to obtain information regarding compliance with MDA.
3. Community compliance with mosquito control interventions. It was measured through quantitative questionnaire interviews and FGDs to obtain information regarding compliance with vector control interventions.

4. Community compliance with morbidity management. It was measured through FGDs to get information regarding compliance with morbidity management and disability prevention (hydrocelectomy and foot hygiene).

3.7.2 Independent variables

The independent variables for this study were:

1. Community awareness of interventions for LF elimination. They were measured through quantitative questionnaire interviews to get information regarding awareness of interventions for LF elimination.
2. Community awareness of morbidity management and disability prevention. It was measured through FGDs to get information regarding awareness of interventions for morbidity management and disability prevention.
3. Social demographic characteristics. They were measured through quantitative questionnaire interviews to get information regarding social demographic characteristics like age, sex, education, health condition, occupation, duration of residence.

3.8 Data collection

3.8.1 Recruitment and training of research assistants

The study recruited two research assistants for the purpose of data collection. The two research assistants were trained for one day briefly on research concept but more emphasis was procedures to follow during conducting interviews and how to fill the questionnaires after requesting consent from interviewees. The training was prepared by an investigator to guarantee quality field operation.

3.8.2 Pre-testing of data collection tools

A pilot study was conducted at one of non-selected wards located in Kibaha district with the aim of pre-testing the research tools (questionnaires) so as to measure the validity and reliability as data collection tools. Pre-testing involved 42 community members (10% of calculated sample size) to guarantee the research tools are user-friendly by avoiding common

problem which is misunderstandings, ambiguities, or other difficulties participants may encounter with instrument items. Investigator and research assistants were involved in pretesting of questionnaires in order to be familiar with the tools.

3.9 Data collection procedure

Data from the two study populations were collected using the following approaches. The filarial test strips (FTS) were used for assessment of CFA in school children while interviewer-based questionnaires and Focus group discussions were conducted with the selected adult community members aged 15 years and above. Filarial test strips (FTS) is a rapid test card which is specific for *W. bancrofti* circulating filarial antigens. The pad contains a gold-labeled polyclonal anti-filarial antibody that binds to the filarial antigen from the blood. When the card is closed the pad touches a nitrocellulose strip. The antibody-antigen complex moves to the strip and is trapped by immobilized anti-filarial monoclonal antibody in the strip coating. The result was observed after 10 minutes.

3.9.1 To determine the social demographic characteristics of the study population

A total of 420 community members and people with hydrocele and elephantiasis aged 15 years and above in areas where the schools were found were involved. The social demographic characteristics were determined by using interview-based questionnaires. The interview was composed of questions on the following; age, sex, education level, employment, economic activities, and length of stay in the area. A total of 395 standard one primary school children were asked to mention their age, sex, and length of stay in the area.

3.9.2 To determine the prevalence of CFA for lymphatic filariasis in standard one primary school children

A total of 395 standard one primary school children were examined to establish the prevalence of CFA using filarial test strips (FTS) and the results were entered in the relevant data form together with the age and sex.

Procedure for blood collection and detection involved the following steps; cleaning the finger to be pricked with an alcohol swab and then the finger was allowed to dry. By using sterile

lancets the internal side of the finger was pricked and the lancet discarded. One hundred microliters (100 μ L) of blood were collected into a calibrated capillary tube coated with an anticoagulant (heparin). A blood sample was slowly added on the kit card and left for 10 minutes to read the results. If a pink test line appeared next to a control pink line it meant positive (the child had circulating filarial antigens) and if a pink test line did not appear, it meant a child had no circulating filarial antigen in all valid cards.

3.9.3 To determine the level of community awareness and participation in the LF elimination MDA program

A total of 420 community members aged 15 years and above, in the area where the schools were found were involved. The level of community awareness on the LF elimination MDA program was determined by using interview-based questionnaires. The interview was composed of questions which were asking if they ever heard of existence of LF elimination MDA programs in their community and where the information was acquired. They were also asked questions related to participation in the last treatment cycles with Ivermectin and Albendazole for LF elimination MDA program.

3.9.4 To assess the level of community participation in LF elimination MDA Program

A total of 420 community members aged 15 years and above in the area where the schools were found were involved. The level of community members who participated in MDA with Ivermectin and Albendazole was determined by using interview-based questionnaires. The interview consisted of closed-ended questions that comprised questions which asked community participation in the last treatment cycles with Ivermectin and Albendazole.

3.9.5 To assess the level of awareness and community compliance to morbidity management interventions (hydrocelectomy and/or foot hygiene)

Focus Group Discussions were held with people who had hydrocele and elephantiasis. Influential people from the community or household with a hydrocele and elephantiasis patient were also included to determine the level of community members who participated in morbidity management and disability prevention. FGDs were held around the village areas where schools were selected. The FGDs composed of contents which were asking

if they ever heard of hydrocelectomy and/or foot hygiene interventions in their community and whether they participate in the interventions of hydrocelectomy and/or foot hygiene. Each focused group discussion involved 6-8 members. With the consent of participants, the FGDs were audiotaped.

3.9.6 To determine the level of awareness and community compliance and/or participation in mosquito control interventions

A total of 420 community members aged 15 years and above, in the area where the schools were found were involved. The level of awareness and community participation in mosquito control interventions was determined by using interview-based questionnaires. The interview consisted of closed-ended questions that were composed of questions which were asking if they ever heard of mosquito control interventions in their community and community participation in environmental modification, compliance to residual house spraying and to use of LLINs.

3.9.7 To explore the underlying reasons for community compliance to MDA with Ivermectin and supportive interventions of hydrocelectomy, foot hygiene and use of insecticide-treated nets

Community members aged 15 years and above, in the area where the schools were found were involved. In assessing the underlying reasons for community compliance and non-compliance to interventions for LF elimination and morbidity management focus group discussions (FGDs) were employed. The FGDs centred on questions which were geared to determine the reasons for either compliance or non-compliance with identified interventions. Each focused group discussion involved 7-8 members. With consent of participants in the FGDs they were audio recorded and data obtained were thematically analyzed.

3.10 Data quality management

3.10.1 Filarial test strips (FTS)

The diagnostic tools for lymphatic filariasis CFA, which were used in this study, were acquired from Neglected tropical disease office in Tanzania. Filarial test strip kits (FTS) have

high sensitivity compared to immunochromatographic test (ICT) for lymphatic filariasis diagnosis in low prevalence settings.

3.11 Data analysis

3.11.1 Quantitative data

3.11.1.1 To determine the social demographic characteristics of the study population.

The collected data on social demographic characteristics were entered into Microsoft excel sheet. The statistical analysis was done using Statistical Package for Social Sciences (SPSS) version 23.0. Results are presented in frequency tables.

3.11.1.2 To determine the prevalence of CFA for lymphatic filariasis in standard one primary school children

The collected data were coded, entered into Microsoft excel sheet. The statistical analysis was done using SPSS and results are presented in frequency tables. Chi-square test was used to test the association of variables considering a P-value of less than 0.05 to be statistically significant.

3.11.1.3 To determine the level of community awareness on the LF elimination MDA program.

The data collected based on awareness were entered into Microsoft excel sheet. The descriptive statistics was done by using SPSS and results are presented in the table. Chi-square test, bivariate and multivariate logistic regression were used to test the association between awareness and social demographic characteristics like age, sex etc. considering a P-value less than 0.05 to be statistically significant

3.11.1.4 To assess the level of community participation in LF elimination MDA program.

The data collected was entered into Microsoft excel sheet. The statistical analysis was done using SPSS and results are presented in a frequency table. Chi-square test, bivariate and multivariate logistic regression were used to test the association between participation and social demographic characteristics like age and sex considering a P-value ≤ 0.05 to be statistically significant.

3.11.1.6 To determine the level of community awareness and compliance to and/or participation in mosquito control interventions in selected wards in Kibaha district.

The data collected based on awareness and compliance to mosquito control campaigns was entered into Microsoft excel sheet. The descriptive statistics was done by using SPSS and results are presented in tables. Chi-square test used to test the association between awareness and social demographic characteristics like age and sex, considering a P-value ≤ 0.05 to be statistically significant. Chi square was used to associate compliance to mosquito control and social demographic characteristics like age and sex, considering a P-value ≤ 0.05 to be statistically significant.

3.11.2 Qualitative data

3.11.2.1 To assess the level of awareness and community compliance to morbidity management interventions (hydrocelectomy and/or foot hygiene)

The collected data from FGDs were analyzed using thematic analysis. The collected audio data on awareness and community compliance to hydrocelectomy and/ or foot hygiene from FGDs were transcribed to obtain textual format and then organized into segments of text and themes finally analysis and interpretations were clustered to similar and related topics together to form major themes.

3.11.2.2 To explore the underlying reasons for community compliance to MDA with Ivermectin and supportive interventions of hydrocelectomy, foot hygiene and use of insecticide-treated nets.

The collected audio data on reasons for community compliance to MDA and supportive interventions from FGDs were transcribed to obtain textual format and then organized into segments of text and themes finally analysis and interpretations were clustered to similar and related topics together to form major themes.

3.12 Ethical consideration

Ethical clearance was obtained from Muhimbili University of Health and Allied Sciences Research Ethical Review Board. Permission to conduct the study was requested from the Kibaha district administrative authorities. Permission to conduct the study in the schools was obtained from the District Education Officer and teachers. Meetings with the village leaders were conducted before the study period in the national language (Swahili, which is widely spoken and understood in the area) to inform them about the study contents and implications as well as asking for their cooperation. Before the beginning of data collection, informed consent was obtained from study participants. For the case of children, their consent was provided by their head teachers and class teachers to allow the children participation. For people with hydrocele and elephantiasis, the respect and informed consent were providing rights to decide to participate in the study without negative consequences. Privacy and confidentiality of the information obtained were maintained in the study whereby numbers were used instead of the names of participants. Justice and fairness in the selection of participants were maintained and also the benefit of the study was an indirect benefit, which will add a contribution to National program, then later will lead to improving the care of participants. Beneficence during this study was maintained by ensuring useful information was provided to participants. The written consent was provided and signed by community members who participated in this study.

3.13 Study limitations

The study limitation was on standard one primary school children who were resisting giving a blood sample, thinking that a lot of blood was going to be collected from them and fear of the pain. This was resolved by demonstrating that a small drop of blood will be collected by finger prick as well as using a pricker which is less painful. Also, consent was given on behalf of the children by teachers and ethical considerations with regard to the study were met.

CHAPTER FOUR

4.0 RESULTS

This chapter presents the findings of the study done in Kibaha district. The findings are categorized according to the study objectives and presented in the following order; social demographic characteristics of the study population, prevalence of CFA for lymphatic filariasis in standard one primary schoolchildren, community awareness on LF elimination MDA program, community participation in LF elimination MDA programme, awareness and community compliance to morbidity management interventions and disability prevention (hydrocelectomy and/or foot hygiene), awareness and community compliance to mosquito control interventions and reasons for community compliance to MDA with Ivermectin and supportive interventions of hydrocelectomy, foot hygiene and use of insecticide-treated nets.

4.1 Social demographic characteristics of the study population

4.1.1 Social demographic characteristics of children

A total of 395 children were tested for CFA. The minimum age was 5 years while the maximum age was 10 years. Their mean age was 6.9 years, with 51.9% being females. The majority (60.0%) of children had stayed in Kibaha district for more than 5 years (Table 1a).

Table 1(a):Social-demographic characteristics of children (N=395)

Variables	Sex		Total (%)
	Male (%)	Female (%)	
Sex	190(48.1)	205(51.9)	395(100)
Age (years)			
5	5(26.3)	14(73.7)	19(4.8)
6	56(45.9)	66(54.1)	122(30.9)
7	92(52.9)	82(47.1)	174(44.0)
8	26(49.1)	27(50.9)	53(13.4)
9	9(45.0)	11(55.0)	20(5.1)
10	2(28.6)	5(71.4)	7(1.8)
Durationofresidence			
6 month – 1 year	2(66.7)	1(33.3)	3(0.8)
1 – 5 years	64(41.3)	91(58.7)	155(39.2)
≥ 5 years	124(52.3)	113(47.7)	237(60.0)

4.1.2 Social demographic characteristics of community members

A total of 420 participants were interviewed of which 59.5% were females while 40.5% were males. The mean age was 37 years with the youngest being 16 years while the oldest was 94 years. More than half (55.2%) had primary education, 21.2% had secondary education while 13.6% had never attended school. The results show that 45.2% were farmers (subsistence farming) and 81.4% had stayed in Kibaha district for more than 5 years (Table 1b).

Table 1(b): Social-demographic characteristics of community members (N=420)

Variables	Sex		Total (%)
	Male (%)	Female (%)	
Sex	170(40.5)	250(59.5)	420(100)
Age group (years)			
15-28	59(36.9)	101(63.1)	160(38.1)
29-42	47(37.3)	79(62.7)	126(30.0)
43-56	31(47.7)	34(52.3)	65(15.5)
57-70	28(51.9)	26(48.1)	54(12.8)
71-98	5(33.3)	10(66.7)	15(3.6)
Marital status			
Married	91(41.4)	129(58.6)	220(52.4)
Single	61(42.4)	83(57.6)	144(34.3)
Divorced	6(40.0)	9(60.0)	15(3.6)
Cohabiting	7(70.0)	3(30.0)	10(2.4)
Widowed	5(16.1)	26(83.9)	31(7.4)
Education level			
Never attended school	26 (27.7)	68(72.3)	94(22.4)
Primary completed	103(44.4)	129(55.6)	232(55.2)
Secondary	40(44.9)	49(55.1)	89(21.2)
Post-secondary	1(20.0)	4(80.0)	5(1.2)
Occupation			
Farmer, subsistence farming	85(44.7)	105(55.3)	190(45.2)
Animal husbandry	3(75.0)	1(25.0)	1(1.0)
Business	53(36.1)	94(63.9)	147(35.0)
Employed	6(54.5)	5(45.5)	11(2.6)
Unemployed	23(33.8)	45(66.2)	68(16.2)
Duration of residence (years)			
1 – 5	27(34.6)	51(65.4)	78(18.6)
≥ 5 years	143(41.8)	199(58.2)	342(81.4)

4.2 Prevalence of circulating filarial antigen (CFA) among school-aged children

A total of 395 of standard one primary school children aged between 5 and 10 years were tested for CFA in Kibaha district. The prevalence of CFA was 0.3% (Table2), thus only one (1) male child aged 9 years was found positive. According to findings the association between sex of the child and blood test results, is shown not significant ($p=0.481$). Also the

infectionstatus was found not associated with duration of residence in the village ($\chi^2=3.678$; $p= 1.000$).

Table 2: Blood examination results for CFA among school-aged children

Variable	Responses	n (%)
Blood test	Negative	394(99.7)
	Positive	1(0.3)
	Total	395(100.0)

4.3 Community awareness on LF elimination MDA program

A total of 420 participants were interviewed in Kibaha district of which majority (89.5%) were aware of the existence of the LF MDA program, while 10.5% were not at all aware. The results showed that 82.5% heard about LF MDA program from community health workers. Out of 79% of participants who were aware of community-based LF interventions organized by village government, 98.8% were aware of mobilizing and distribution of ivermectin and albendazole while 1.2% were aware of mobilizing LLINS usage (Table 3a). The results indicated that there is a significant association between the sex of individual and awareness of the MDA program ($\chi^2=8.9$ $df=1$; $P=0.003$). The association between awareness of the MDA and duration of residence in the village is significant ($\chi^2=7.828$ $df=1$ $p=0.005$) while different age groups, education level and occupation of the individual are not significantly associated with the level of awareness of the MDA. In a bivariate logistic regression, the social demographic characteristics that were significantly associated with awareness of LF MDA were sex of individual and duration of residence. The odds of being aware of LF MDA was higher (OR=2.5, 95% CI= 1.4-5.0) among female participants as compared to male participants. Moreover, the odds of awareness of LF MDA was shown to be higher (2.6 times) among individuals with >5 years of duration of residence compared to 1-5 years (OR=2.6, 95% CI= 1.4-4.1).

All the variables suspected to be associated with awareness of LF MDA were adjusted in a Multivariate logistic regression, Thus being females (AOR=2.5, 95% CI= 1.4-5.0) and individuals with duration of residence of >5 years (AOR=2.9, 95% CI= 1.4-5.8) were found to be aware of LF MDA (Table 3b).

Table 3a: Community awareness in MDA program

Variables	Response	n (%)
Ever heard of LF MDA	Yes	376(89.5)
	No	44(10.5)
	Total	420(100)
Heard about LF MDA	Heard from friend or neighbor	14(3.7)
	Heard about it on the radio	42(11.2)
	Heard about it on the television	6(1.6)
	Saw poster or pamphlet	4(1.1)
	Heard from health worker	310(82.4)
	Total	376(100)
LF treatment cycles	Each year	283(75.3)
	After 2 years	12(3.2)
	More than 3 years	6(1.6)
	I don't know	75(19.9)
	Total	376(100)
Eligible to take tablets during LF MDA	Every one	199(52.9)
	Individuals aged 5 years and above	121(32.2)
	Pregnant women	1(0.3)
	Individuals with elephantiasis and hydrocele	7(1.9)
	I don't know	48(12.8)
	Total	376(100)
Any community-based LF interventions organized by the village government	Mobilizing and distribution ofivermectin and albendazole	328(98.8)
	Mobilizing LLINS usage	4(1.2)
	Mobilizing morbidity management,hydrocelectomy and foot hygiene	0(0.0)
	Total	332(100)

Table 3b: Bivariate and Multivariate logistic regression to awareness in MDA

Variables	Awareness ON LF MDA		COR(95CL)	P-Value	AOR(95CL)	P-Value
	Yes n (%)	No n (%)				
Sex						
Male	143(84.1)	27(15.9)	ref		ref	
Female	233(93.2)	17(6.8)	2.5(1.4-5.0)	0.004	2.5(1.4-5.0)	0.002
Age group (years)						
15-28	139(86.9)	21(13.1)	ref			
29-42	111(88.1)	15(11.9)	0.15(0.01-2.5)	0.187		
43-56	62(95.4)	3(4.6)	0.14(0.01-2.3)	0.165		
57-70	52(96.3)	2(3.7)	0.05(0.00-0.9)	0.068		
71-98	12(84.6)	2(15.4)	0.04(0.00-0.8)	0.060		
Marital status						
Married	201(91.4)	19(8.6)	ref			
Single	125(86.8)	19(13.2)	1.37(0.3-6.2)	0.682		
Divorced	14(93.3)	1(6.7)	2.21(0.5-9.9)	0.306		
Cohabiting	7(70.0)	3(30.0)	1.04(0.9-12.4)	0.978		
Widowed	29(93.5)	2(6.5)	6.21(0.8-44.6)	0.069		
Education level						
Never attended school	82(86.0)	12(14.0)	ref			
Primary completed	212(91.4)	20(8.6)	1.4(0.2-12.8)	0.491		
Secondary	78(87.6)	11(12.4)	0.0(0.0-	0.893		
Post-secondary	4(80.0)	1(20.0)	0.17(0.06-2.01)	0.135		
Occupation						
Farmer, subsistence farming	170(89.5)	20(10.5)	ref			
Animal husbandry	3(75.0)	1(25.0)	0.5(0.3-1.2)	0.130		
Business	136(92.5)	11(7.5)	1.6(0.1-16.3)	0.712		
Employed	11(100)	0(0.0)	0.4(0.2-0.9)	0.029		
Unemployed	56(82.4)	12(17.6)	0.0(0.0-	0.999		
Duration of residence (years)						
1 – 5	63(80.8)	15(19.2)	ref		ref	
≥ 5 years	313(91.5)	29(8.5)	2.6(1.3-5.1)	0.006	2.9(1.4-5.8)	0.003
COR-crude odds ratio			AOR-Adjusted odds ratio			

4.4 Community participation in LF elimination MDA program

Out of 420 participants interviewed; the majority (76%) had participated in the LF-MDA while 24% had never participated in MDA. The results showed that 89.7% had participated more than once and 88.9% had swallowed ivermectin and albendazole more than once (Table 4a). Moreover, individual participation in the MDA program was associated with the sex of the individual ($\chi^2=12.368$ df=1; $p<0.001$). The results indicate that females were more likely to participate in MDA than males. Duration of residence in the village was found to be significantly associated with participation in the MDA program ($\chi^2=10.896$ df=1; $p=0.001$). Furthermore, results indicated that there is an association between awareness and participation in the program ($\chi^2=28.613$ df=1; $p<0.001$). In a bivariate analysis, the social demographic characteristics that were significantly associated with participation in LF MDA were sex of individual and duration of residence. The odds of participating in LF MDA was higher (OR=2.2, 95% CI= 1.4-3.3) among female participants as compared to male participants. Moreover, the odds of participating in LF MDA was shown higher (2.4 times) among individuals with >5 years of duration of residence compared to 1-5 years (OR=2.4, 95% CI= 1.4-4.1). Furthermore, the odds of participating in LF-MDA was 71 times higher (OR=71.4, 95% CI=21.7-25.0) among individuals who ever heard LF MDA.

All the variables suspected to be associated with participation in LF- MDA were adjusted in a Multivariate logistic regression, Thus being females (AOR=2.2, 95% CI= 1.4-3.3) and individuals with duration of residence >5 years (AOR=2.3, 95% CI= 1.4-4.0) were found to be more likely to participate in LF- MDA. Also individuals who ever heard of LF-MDA (AOR=72, 95% CI= 21.6-240.0) were more likely to participate in MDA (Table 4b).

Table 4a: Community participation in LF elimination MDA

Variable	Response	n (%)
Participated in LF-MDA	Yes	319(76.0)
	No	101(24.0)
	Total	420(100)
Times participate in MDA	Once	25(7.8)
	More than once	286(89.7)
	I don't know	8(2.5)
	Total	319(100)
Times ever swallowed drugs	Once	26(8.2)
	More than once	282(88.9)
	Never	11(3.4)
	Total	319(100)
Last swallowed the drugs	Last year	259(84.1)
	Last two years past	25(8.1)
	I don't remember	24(7.8)
	Total	308(100)

Table 4b: Bivariate and Multivariate logistic regression to participation in LF-MDA

Variables	Participation of LF-MDA		COR(95CL)	P-Value	AOR(95CL)	PValue
	Yes n (%)	No n (%)				
Sex						
Male	114(67.1)	56(32.9)	ref		ref	
Female	205(82.0)	18(18.0)	2.2(1.4-3.3)	0.001	2.2(1.4-3.3)	0.001
Age group (years)						
15-28	118(73.8)	42(26.3)	ref			
29-42	94(74.6)	32(25.4)	0.36(0.02-5.8)	0.469		
43-56	51(78.5)	14(21.5)	0.34(0.02-5.6)	0.451		
57-70	44(81.5)	10(18.5)	0.28(0.02-4.7)	0.371		
71-98	12(80.0)	3(20.0)	0.23(0.01-3.9)	0.309		
Marital status						
Married	168(76.4)	52(23.6)	ref			
Single	106(73.6)	38(26.4)	4.49(0.9-19.4)	0.071		
Divorced	11(73.3)	4(26.7)	5.19(0.9-22.8)	0.064		
Cohabiting	5(50.0)	5(50.0)	5.27(0.8-32.9)	0.078		
Widowed	29(93.5)	2(6.5)	14.5(2.1-44.6)	0.082		
Education level						
Never attended school	72(76.6)	22(23.4)	ref			
Primary completed	182(78.4)	50(21.6)	0.43(0.24-7.6)	0.564		
Secondary	62(69.7)	27(30.3)	0.28(0.02-4.5)	0.364		
Post-secondary	2(60.0)	1(40.0)	0.44(0.03-7.2)	0.562		
Occupation						
Farmer, subsistence farming	155(81.6)	35(18.4)	ref			
Animal husbandry	3(75.0)	1(25.0)	0.44(0.2-1.3)	0.064		
Business	108(73.5)	39(26.5)	0.65(0.06-6.6)	0.718		
Employed	8(72.7)	3(27.3)	0.7(0.4-1.3)	0.273		
Unemployed	45(66.2)	23(33.8)	0.73(0.2-3.03)	0.669		
Duration of residence (years)						
1 – 5	48(61.5)	30(38.5)	ref		ref	
≥ 5 years	271(79.2)	71(20.8)	2.4(1.4-4.1)	0.001	2.3(1.4-4.0)	0.001
Ever heard LF MDA						
Yes	316(84.0)	60(16.0)	71.4(21.7-25.0)	0.000	72.0(21.6-240)	0.000
No	3(6.8)	41(93.2)	ref		ref	
COR-crude odds ratio			AOR-Adjusted odds ratio			

4.5 Awareness and community compliance to morbidity management interventions (hydrocelectomy and/or foot hygiene)

This objective intended to assess the level of awareness and community compliance with morbidity management interventions. The information in this component was generated through focus group discussions. A total of thirty-one (31) individuals with lymphoedema and hydrocele participated, whereby more than half (17) had lymphoedema while fourteen (14) had hydrocele. Also, eighteen (18) of the respondents were males while thirteen (13) were females. The following sections narrate the findings;

4.5.1 Awareness on hydrocelectomy and/ or foot hygiene

Most of the respondents mentioned that they have heard about hydrocelectomy campaign. Respondents were asked the source of information about the hydrocelectomy campaign. Majority of respondents said they heard from health workers and friends or neighbors. Most males reported being aware of the surgery to drain out the fluid from hydrocele. The following are quotations from respondents;

“Yes, I had heard about hydrocelectomy. I heard from friends and health workers. They said that it involves draining fluid from our infected area (hydrocele)” (Male FGD, Kwala, 40-50 years).

“I have heard of hydrocelectomy campaign it is only for males with hydrocele. I heard from a health workers” (Female FGD, Gwata, 30-40 years).

Respondents were also asked about foot hygiene activities such as washing affected area with soap, the exercise of the affected limb, elevation and use of footwear and use of antiseptic. Nearly half of all respondents reported that they were aware of foot hygiene. More females mentioned that they heard about foot hygiene practices like washing with soap and water, the exercise of the affected limb and use of antiseptic. They reported that they heard from health workers. However, most of the respondents mentioned that they had never heard about the use of footwear on a regular basis and elevation. One of the respondents said,

“I heard before about foot hygiene practice likewashing the affected limb, use of antiseptic and exercise of the affected limb. I heard from a health workers” (Female FGD, Kwala, 43 years).

Another respondent added,

“The use of footwear on a regular basis and elevation we never heard. It is the first time we have heard from you” (Male FGD, Gwata, 40-59 years).

4.5.2 Compliance to hydrocelectomy and/ or foot hygiene

The majority of respondents (11/14) reported that they never participated in the hydrocelectomy campaign. However, a few (2/11) respondents reported that they had registered their names more than once to the campaign. Respondents were also asked, any alternative management of the problem, they ever used to reduce suffering. Nearly all of respondents reported that they were involved in using the traditional medicine and cleaning hydrocele. One of the respondents said,

“I never participated in a hydrocelectomy campaign. Despite the fact that I had registered my name once. I only participate in cleaning the infected area (hydrocele)at least once a day. Although, I used to drink in tea and chewing traditional medicines named kidukuli.It helps to provide pain relief...but we are also hoping it will cure us”(Male FGD, Gwata, 63 years).

Only three of the respondents reported that they had participated in hydrocelectomy. However, two out of three respondents who participated in hydrocelectomy used their own pocket money, while only one respondent reported that he participated in the hydrocelectomycampaign. The following are quotations from respondents;

“I participated in hydrocelectomy four years ago. After a lot of suffering, I decided to go to the hospital on my own. Thank God now I’m okay” (Male FGD, Vikuge, 40-50 years).

“Yes, I participated in the hydrocelectomy campaign. It was ten years ago.If I am not mistaken. They came and took me from here in the village to the camp where I participated.Since I participated in hydrocelectomy to be honest I don’t experience the same as I was before” (Male FDG, Kwala,50-69 years).

Among seventeen (17) of respondents with lymphoedema, only thirteen had been practicing foot hygiene practices like washing of the affected limb with soap, the exercise of the affected limb, applying oil to the affected limb and antiseptic. Elevation was reported from only one respondent while the use of right size footwear on a regular basis nobody reported among respondents with lymphoedema. The respondents were asked if they ever participated in alternative management of the problem. Nearly all of the respondents mentioned that they had used traditional medicines while only two of them, reported they had done scarification. The following are quotations from respondents;

“I participate in the cleaning of the affected limb like washing with soap and soaking the affected leg in water with antiseptic for 15 minutes, exercise the affected limb and applying oil. One year ago, I was participating in washing my leg with traditional medicines and scarification of my leg” (Male FGD, Vikuge, 50-60 years).

“I’m participating in foot hygiene such as elevation of my legs at night using pillows, washing, and exercise, but also applying oil to the affected limbs. I was using antiseptic two months ago. For now, I stopped because it is finished. I was given during foot hygiene seminar (research) to use while washing my legs and applying after washing” (Female FGD, Janga, 60-70 years).

However, a few respondents with lymphoedema reported that they never participated in foot hygiene practices despite they have been involving only in the washing of the affected limb once they took a bath only once a day. One of respondent said,

“Foot hygiene like elevation, exercise, and others you mentioned I never participated. I’m involved in cleaning only at the time I take a bath in the evening after I return from the farm. Farming activities leave no time for participating” (Male FGD, Kwala, 50-60 years).

Another respondent added,

“I only used to washing my legs with traditional medicine, I can’t say how many times but not more than twice a week. But also occasionally the same medicine; I used to drink in tea in the morning” (Female FGD, Kwala, 50-69 years).

4.6 Awareness and community compliance to mosquito interventions

A total of 420 participants interviewed, most of the participants (99.3%) were aware while only few (0.7%) were not at all aware of mosquito control interventions. However the transmission of LF is fairly understood whereas half of the participants (50.2%) were aware that transmission is through mosquito bites, 27.1% said that they do not know the mode of transmission. 7.9% reported that transmission is associated with witchcraft while 5.5% reported that inheritance is the mode of transmission of LF (Table 5). Moreover, the results indicated that the level of awareness on mosquito interventions is significantly associated with the gender of the individual in the community ($\chi^2=4.44$ df=1, p=0.035). There was statistically significant association between the age of the individual with the level of awareness to mosquito interventions ($\chi^2=12.668$; p=0.015). The level of awareness to mosquito interventions was not significantly associated with education level, marital status, occupation and duration of residence of the individuals.

Table 5: Awareness to mosquito control interventions

Variable	Response	n (%)
Heard mosquito control interventions	Yes	417(99.3)
	No	3(0.7)
	Total	420(100)
Heard of Mosquito control measures of LF elimination	LLINS	275(65.5)
	Residual spraying	2(0.5)
	Environmental modification	37(8.8)
	LLINS, Residual spraying and Environmental modification	103(24.6)
	I don't know	3(0.7)
	Total	420(100)
	Transmissions of LF	Mosquito bites
Walking barefooted		24(5.7)
Stepping in dirty water		12(2.9)
Adultery		1(0.2)
Sleeping with a woman in menstruation		2(0.5)
Witchcraft		33(7.9)
Inheritance		23(5.5)
I don't know		114(27.1)
Total		420(100)
Source of Information on mosquito control measures		Heard from friend or neighbor
	Heard about it on the radio	124(29.5)
	Heard about it on the television	16(3.8)
	Saw poster or pamphlet	15(3.6)
	Heard from health worker	212(50.5)
	Total	420(100)
Eligibility to use mosquitocontrol measure	Patients only	7(1.7)
	Health individuals only	1(0.2)
	All individuals	403(96.0)
	I don't know	9(2.1)
	Total	420(100)

Of the study participants, the majority 78.3% reported that they regularly use LLINS, 19.8% reported that they did not regularly use LLINS while only 1.9% never used LLINS. Also 19.8% reported that more often used residual spraying; the majority 77.1% said that less often used residual spraying while 3.1% said that they never used residual spraying (Table 6). Moreover, the results indicated that compliance to LLINS and environmental modification were significantly associated with education level of the individuals in the villages ($\chi^2=27.718$; $p=0.005$) and ($\chi^2=27.273$; $p=0.02$) respectively.

The association between occupation type and usage of residual spraying was significant ($\chi^2=19.415$; $p=0.008$). The mosquito interventions were not significantly associated with age groups, marital status or duration of residence of the individuals. Furthermore, results indicated that there is an association between awareness and participation in mosquito control interventions like LLINs, residual spraying and environmental modification ($\chi^2=17.101$; $p<0.001$), ($\chi^2=31.064$; $p<0.001$) and ($\chi^2=42.790$; $p<0.001$) respectively.

Table 6: Community compliance to mosquito control interventions

Variable	Response	n (%)
Sleep in LLINS	Every night	329(78.3)
	Not regularly	83(19.8)
	Never	8(1.9)
	Total	420(100)
Used residual spraying	More often	83(19.8)
	Less often	324(77.1)
	Never	13(3.1)
	Total	420(100)
Participated in environmental modification	More often	150(35.7)
	Less often	269(64.0)
	Never	1(0.2)
	Total	420(100)

4.7 Reasons for community compliance to MDA with ivermectin and supportive interventions of hydrocoelectomy, foot hygiene and use of insecticide-treated nets

This objective intended to explore the underlying reasons for community compliance to MDA with Ivermectin and supportive intervention of hydrocoelectomy, foot hygiene and use of insecticide-treated nets. The information in this component was generated through a closed interview and focus group discussion. The following are the findings;

4.7.1 Reasons for community compliance to MDA with ivermectin

Out of 420 participants interviewed, the majority of participants (90.0%) participated in MDA with ivermectin and reported that the reason for compliance was that they understood the personal risk of LF and benefit of MDA. However, a proportion of 31.9% participants did not participate in MDA. The reasons for non-compliance to MDA with ivermectin, were that they were absent during distribution (Table 7a).

Table 7(a): Reasons for compliance to MDA with ivermectin

Variables	Reasons for Participation /Non participation in MDA Program	n(%)
Compliance to MDA with ivermectin	Understanding personal risk of LF and benefits of MDA	287(90.0)
	Good delivery mechanism	23(7.2)
	Prior experience with MDA	9(2.8)
	Total	319(100)
Noncompliance to MDA with ivermectin.	Absent during distribution	32(31.9)
	My condition does not allow	13(12.9)
	Tablets not distributed	2(1.9)
	Not informed about distribution	20(19.8)
	Do not like tablets	7(6.9)
	Worried about side effects	12(11.9)
	Don't think tablets are effective	8(7.8)
	Taking alcohol	7(6.9)
	Total	101(100)

The reasons for community compliance to MDA with ivermectin were also supported with qualitative data from focus group discussions. Participants were asked to explain the reason for participating in MDA with ivermectin. The majority of respondents reported that the reason for them to participate was the benefit of the program to prevent transmission of LF while only a few of respondents mentioned that they participate because they have been told to participate in MDA. The following are quotations of respondents;

“When you participate in MDAs you protect yourself from these diseases and also form immunity. Protects individuals without diseases from acquiring disease... these are what I know” (Female FGD, Janga, 30-49 years).

“I participate in MDA simply because we are told to participate by our community health workers” (Male FGD, Gwata, 18-35 years).

Furthermore, non-compliant respondents were asked to state the reasons for not participating in MDA with ivermectin. Most of the respondent reported that fear of side effects of drugs like fainting, infertility, and absent during the distribution of drugs in the community. A few of them also reported that they were not participating in MDA because they do not have the disease and they were sick during the MDA program. One of the respondents said,

“In this village, there are rumors that the drugs lead to infertility to women of childbearing age. Also, it causes fainting of our children at schools and hence lack of participation in MDAs” (Female FGD, Janga, 25-39 years).

Another respondent added,

“I did not participate in MDA because I have always been absent during distribution. I spend a lot of time on the farm. It's far away from herein the village” (Male FGD, Kwala, 46 years).

Some of the respondents with lymphoedema stated that the reason for noncompliance to MDA is because they do not have faith in the drug effectiveness. One of the respondents said,

“The drugs we are given to swallow. I don’t think it helps people like us with lymphoedema” (Female FGD, Kilangalanga, 40-50 years).

4.7.2 Reasons for community participating in supportive interventions of hydrocelectomy and/ or foot hygiene

The information was generated through focus group discussions. Participants were asked to explain the reason for participating in supportive interventions. The majority of respondents reported that experiencing stigma and discrimination that includes receiving embarrassing stares and insults, from the community is the main reason that leads them to participate in morbidity management interventions. However, some of the respondents reported they hate the disease manifestation, so participating helps relieving pain and discomfort. Respondents who were quoted stated that;

“The reason which forced me to participate in hydrocelectomy campaigns, is that I hated that situation I was in previously, if I wear even nice trousers still I was looking very bad, as well as receiving embarrassment from youth” (Male FGD, Kwala 50-69 years).

“I participate in foot hygiene because I want to get relief. I don’t want to see my leg progress to become thicker. Sometime you will find out one leg is thicker and heavy than other, until it becomes difficult to walk around. On my side, I don’t want to see that happen” (Female FGD, Kilangalanga, 30-45 years).

Furthermore, non-compliant respondents were asked to state the reasons for not participating in supportive intervention, hydrocelectomy, and foot hygiene. Nearly all of respondents said they do not participate in hydrocelectomy because the free hydrocelectomy campaign does not reach their communities. Also the high cost of surgery and lack of money contributed to noncompliance. One of the respondents said,

“The reason for not participating in hydrocelectomy is because now it does not exist here. Last time I heard people participated from our community which was more than 10 years ago. At that time I didn’t have hydrocele. So since then we don’t get a chance

to participate in a hydrocelectomy campaign. However, I don't have money to go to the hospital for surgery on my own” (Male FGD, Kwala, 40-59 years).

However, a few respondents said they do not participate in hydrocelectomy because they fear of hydrocelectomy complications that include sterility and impotence. One of the respondents said,

“I'm afraid of the complications after surgery. I heard people said, individuals who have done hydrocelectomy, they cannot perform work that use much power. But also they said you become dysfunction” (Male FGD, Kwala, 40-59 years).

Only one among all the respondents reported that the other reason for not participating in hydrocelectomy is the fear of death. The respondent was quoted as follows;

“Others they afraid of death, fear that they will not wake up from surgery bed at the hospital because some them associated their problems (hydrocele) with witchcraft” (Male FGD, Soga, 60-70 years).

Furthermore, all of the non-compliant respondents in foot hygiene practices reported that the reason for not participating is a lack of knowledge about foot hygiene. Respondent said,

“On my side, despite being busy with farming, I had no idea how it is being done and its benefit to my problem (lymphoedema)” (Male FGD, Gwata, 50-69 years).

4.7.3 Reasons for community compliance to insecticide-treated nets

Out of 420 participants interviewed, more than half (61.6%) who participated in the usage of insecticide-treated nets reported that the reason for compliance is because they understand the risk of mosquito bites that lead to transmission of malaria and LF. However, the reason for non-compliance to insecticide-treated nets, reported by 62.5% was that poor program setting of insecticide-treated nets distributed (Table 7b).

Table 7(b): Reasons for compliance to insecticide treated nets

Variables	Reasons for Compliance/non Compliance to mosquito control interventions	n(%)
Compliance with Insecticide-treated nets	Awareness and knowledge about LF	30(7.2)
	Understanding the risk of mosquito bites	257(61.6)
	Mosquito disturbance	124 (2.6)
	Availability of possible mosquito control	1(0.2)
	Total	412(100)
Non-compliance to insecticide-treated nets.	Poor program setting	5(62.5)
	Absent during program	3(37.5)
	Total	8(100)

The reasons for community compliance to insecticide-treated nets were also supported with qualitative data from focus group discussions. Participants were asked to explain the reason for participating in using insecticide-treated nets. The majority of respondents reported that the reason for participating in use of insecticide-treated nets is to prevent getting malaria; while only a few of respondents mentioned that they participate because of avoiding disturbance caused by mosquitoes at night and other dangerous insects like millipedes. The following are quotations of respondents;

“I regularly sleep in bed net. I protect myself from getting malaria. They said prevention is better than treatment” (Female FGD, Kilangalanga, 35-45 years).

“There are a lot of Mosquitoes here; they cause a lot of disturbance at night. As well, as helps to protect you from getting bitten by other poisonous small animals like snakes and millipedes” when sleeping at night (Male FGD, Gwata, 29-40 years).

Furthermore, non-compliant respondents were asked to state the reasons for not participating in using insecticide-treated nets. Most of the respondents said they do not use nets because they are dilapidated, few numbers of free bed nets were distributed as well as poor distribution network. One of the respondents said;

“We have only a few bed nets than the number of beds and family members. We were given only one free bed nets” (Female FGD, Vikuge, 30-39 years).

Some of the respondents reported that absence during free bed net distribution is the reason for not being able to comply with insecticide-treated nets. Few of the respondents said they are not encouraged to use bed nets because they do not think it is an effective way to control mosquitoes. One of respondents said,

“Yes! They gave us bed nets. But I don't think it is the best way to control mosquito at all, they are just doing business with the life of people” (Male FGD, Vikuge, 50-69 years).

CHAPTER FIVE

5.0 DISCUSSION

This chapter presents the discussion of the study done in Kibaha district. This discussion is categorized according to the study objectives and presented in the following order; social demographic characteristics of the study population, prevalence of CFA for lymphatic filariasis in standard one primary schoolchildren, community awareness on LF elimination MDA program, community participation in LF elimination MDA programme, awareness and community compliance to morbidity management and disability prevention interventions (hydrocelectomy and/or foot hygiene), awareness and community compliance to mosquito control interventions and reasons for community compliance to MDA with Ivermectin and supportive interventions of hydrocelectomy, foot hygiene and use of insecticide-treated nets.

5.1 Social demographic characteristic of the study population

The social demographic characteristics of school children showed that more females were recruited than males and their mean age was 7 years; and the majority of the children have been resident in the study area for more than 5 years. The finding of more females than males in this population seem to reflect the general population trend which indicates that females are more than males, as reported in the population projections of 2017 (NBS, 2017).

Furthermore, the population of community members aged 15 years and above also showed that females were more (59.5%) than males. The mean age was 37 years, and the majority had primary education level.

5.2 Prevalence of CFA in School Children

The observed prevalence of CFA of 0.3% in school children indicates that transmission of LF has been interrupted in the district. A previous study reported that countries with successful MDA program are awaiting for further guidance on when to stop MDA and post MDA surveillance that relies on testing school-aged children for filarial antigen (WHO, 2011). The CFA test results from school age children are used as a means of transmission

assessment(TSA) whereby transmission of new infections may be demonstrated. However, it has been reported that a TAS based on community members to assess the persistent reservoir of infection might be a more effective tool for post MDA surveillance than a school age children-based TAS that aims to detect new infections(Harris and Wiegand, 2017). According to NTD reports, in 2017 persistent hot spots were identified where transmission was still ongoing. These included Kibaha district which had a CFA prevalence of 4.1%(NTDCP, 2018). However, based on the current study findings the observed prevalence found in only one child aged 9 years may not be interpreted with certainty that it is a new transmission. Because he was eligible to participate in MDA program for at least three (3) of last MDA campaigns. The drop in the prevalence can be explained by the fact that MDA intervention and other supportive intervention such as mosquito control have been effective to disrupt transmission through reduction of microfilaria load. The current study findings indicate that the majority of individuals (76%) participated in the last LF-MDA program. Earlier studies indicated that antigen testing of school aged children for detecting low-level persistence of LF transmission have less sensitivity than molecular xenomonitoring and anti-filarial antibody of school children(Rao *et al.*, 2017). This suggests that a drop in the prevalence could possibly be due to loss of sensitivity of antigen testing as we approach elimination by the year 2020.

Analysis of the current findings indicate that, there is no significant association between the blood test results and sex of the child ($p=0.481$). This suggests that to be infected with LF is not influenced by the sex of an individual. However, another previous study, reported that transmission of LF is determined by the gender of an individual whereby males were more significantly infected than females(Clarer *et al.*, 2018). Furthermore, the study findings showed that there is no significant association between blood test results and duration of residence ($\chi^2=3.678$; $p=1.000$). This may possibly be due to the absence of new transmission in the endemic area. This finding implies that prolonged stay in the endemic area may not be required for acquisition of LF infection.

5.3 Awareness of LF elimination MDA

Awareness of LF-MDA elimination program results showed that 89.5% of the respondents interviewed were aware of the LF -MDA. This implies that the program had been effectively implemented in the study area to attain the goal of MDA to eliminate LF by 2020. One among the main factors that facilitates the effective implementation of the LF-MDA program is awareness creation (Silumbwe *et al.*, 2017). It was also found that the main sources of information on LF-MDA program was the health worker and radio similar to the study which revealed that the source of population awareness of the MDA program was drug distributors (Sunish *et al.*, 2013). Studies elsewhere have also shown that awareness of the disease and the benefits of the treatment determines the level of community participation (Njomo *et al.*, 2014). Moreover, the results indicated that there is a statistically significant association between the sex of individual and the level of awareness of the MDA program (Table 3b). The females were 2.5 times likely to hear about MDA campaigns as compared to males and this possibly could be due to the fact that many females spend much time at home and may have access to information from community health workers as well as radio messages. Furthermore, other possibilities could be due to greater number of female community health workers that makes it easy to spread information to their fellow females than males. The association between awareness of the MDA and duration of residence in the village was found to be significant (Table 3b). This suggests that individuals with the longest duration of residence in the study area were 2.6 times more likely to be informed about the MDA program than individuals with the shortest duration of residence. Previous studies have shown that age, gender, and educational level were identified as factors influencing awareness and knowledge (Babu *et al.*, 2004).

5.4 Participation in LF elimination MDA

This study indicates that the majority of respondents interviewed had participated in LF-MDA (Table 4a). This implies that individuals in the study area participate in MDA program which contributes to disruption of LF transmission through reduction of the microfilaria load (Mwakitalu *et al.*, 2013). Furthermore, the association between participation in MDA and

sex of individual was statistically significant (Table 4b). This suggests that females are 2.2 times more likely to participate in MDA than males. Moreover, duration of residence in the area was statistically shown to be significantly associated with participation in MDA, in that the individuals with a longer duration in the area were more likely to participate than those with a shorter duration of residence ($\chi^2=10.896$ df=1; $p=0.001$) and (AOR=2.3, 95% CI= 1.4-4.0). Furthermore, the findings indicate that there is a highly significant association between awareness and participation in MDA ($\chi^2=28.613$ df=1; $p<0.001$). This is corroborated by similar studies which indicated that awareness, knowledge and prior experience with MDA are among the factors which influence compliance to MDA (Krentel *et al.*, 2013; Jones *et al.*, 2012). This suggests that awareness of LF-MDA was a determinant of participation in LF-MDA program.

5.5 Awareness and compliance with morbidity management interventions

The findings of the current study indicate that the majority of the individuals in the study area have heard about hydrocelectomy and/or foot hygiene. The main source of information on morbidity management and disability prevention interventions was the health workers. This suggests that individuals are well informed by health workers on the existence of morbidity management and disability prevention interventions. Studies elsewhere have also shown that community knowledge and awareness of available care like hydrocelectomy motivated people to participate in LF interventions (Sodahlon *et al.*, 2013). Furthermore, nearly all males were aware of the activity of draining fluid from the hydrocele while nearly all females were aware of foot hygiene practices to the affected limb. These observations could possibly be due to the gender specificity of the clinical manifestations. The majority of the patients with lymphoedema were females while the majority of patients with hydrocele were males.

The majority of the respondents who reported to be aware of the hydrocelectomy campaign never participated in the campaign. This could be possibly due to lack of institutionalized morbidity management and disability prevention interventions and free funded hydrocelectomy campaign that will allow individuals with hydrocele to participate freely. Moreover, the majority of individuals with lymphoedema were females and nearly all

reported participating in foot hygiene practices on the affected limb similar to earlier findings which indicated that majority of women participate in lymphedema management programs or foot hygiene practices (Budge *et al.*, 2013). Although other foot hygiene practices such as elevation and use of right size footwear on a regular basis were never mentioned by the respondents this could possibly be due to lack of awareness of the practices. Few of the respondents who never participated in foot hygiene practices were not aware of foot hygiene practices and their benefits. However other studies have shown that patients with large limbs, small limbs and history of inflammatory episodes who complied with treatment showed decreased severity of disability and reduction in days of work lost (Narahari *et al.*, 2013).

5.6 Awareness and compliance to mosquito control interventions

The findings of the current study indicate that majority of participants were aware of mosquito control interventions like LLINS, residual spraying, and environmental modification. This implies that the general community in the study area is aware of mosquito control measures. LLINS is the most common mosquito control measure which individuals have heard about. The main source of information on mosquito control measures was reported to be the health workers and radio. The study showed that transmission of LF is fairly understood and about fifty percent (50.2%) indicated to have the knowledge that transmission is through mosquito bites while other participants believed in myths and misconceptions (Table 5a). Other studies have indicated that knowing that mosquito bite is the mode of transmission of LF was shown to be associated with compliance (Krentel *et al.*, 2013).

The results showed that the level of awareness on mosquito control measures was significantly associated with the sex of the individual in the study area ($\chi^2=4.44$ df=1 p=0.035). This implies that females in the study area were likely to be aware of mosquito control measures than males. It was also found that the level of awareness on mosquito interventions was associated with age group of the individuals in the study area ($\chi^2=12.668$; p=0.015). Based on these findings it seems that individuals aged 50-70 years and above were less likely to be aware of mosquito control measures. This could possibly be due to age related

memory loss and/or related physiological changes which may contribute to takings longer to learn new information and recall information.

Based on the results of all the available control measures like LLINS, residual spraying, and environmental modification it seems LLINS is the most commonly used mosquito control measure in the study area. This is similar to a previous study which reported that the most commonly used mosquito control method was the bed nets. However, there are factors which were reported to compromise bed net efficacy including bed net sharing by two or more individuals, bed nets with holes and ineffective usage habits like leaving a limb hanging outside the net or closely touching the net while sleeping (Msellemu *et al.*, 2017). The current study indicates that residual spraying and environmental modification were less frequently used. This could possibly be due to low accessibility of these possible mosquito control methods.

Furthermore, this study indicates that education level has an association with compliance to LLINS and environmental modification. This implies that an individual with a higher education level is more likely to participate in environmental modification and usage of LLINS. Additionally, the study suggests that there is a significant association between occupation type and usage of residual spraying as businessmen seemed to be more likely to participate in usage of residual spraying. This could possibly be due to high accessibility to the relevant insecticides.

5.7 Reasons for community compliance to MDA with Ivermectin and supportive interventions of hydrocelectomy, foot hygiene and use of insecticide-treated nets

The study indicates that the majority of individuals participated in LF elimination interventions like MDA with ivermectin and mosquito control. Reasons given for participating understood of personal risk of LF and benefit of MDA which is to disrupt further transmission of LF. Other reasons given were drug distributor influence and prior experience in MDA. This implies that understanding the aspects related to drug distribution and use are decisive determinants for individuals participating in the MDA program. Previous studies have

also reported that drug distributor influence, prior experience, knowledge of LF and benefit of MDA were determined as the reasons that may influence community participation in MDA (Krentel *et al.*, 2013).

With respect to Noncompliance to MDA with ivermectin; the majority of participants indicated they were absent from their homes during distribution while others expressed fear of side effects of the drugs like fainting and infertility as well as having no information about distribution schedules as some of the reasons for non participation. Similar findings in other studies have been reported mainly absence during distribution, concerns of the drug side effects and lack of information on the distribution schedule (Kisoka *et al.*, 2014). These observations suggest that sensitization campaigns need to be emphasized and effective training of the distributors to ensure that correct information about the drug and distribution schedules is widely publicized in respective communities in order to improve individual participation in upcoming MDA rounds.

According to the study findings, reasons given by all individuals with lymphoedema and hydrocele who participated in supportive interventions of hydrocelectomy and /or foot hygiene were; experience of stigma and discrimination such as embarrassing stares and insults, due to their condition. Other reasons were relieving pain and discomfort. Similar findings in other studies have reported reasons for patients with hydrocele to participate in hydrocelectomy such as: being viewed inferior on account of disability and relieving pain and discomfort (Abdulmalik *et al.*, 2018). This implies that the indicated reasons are determinants for individual participation in morbidity management and disability prevention. Furthermore, reasons for noncompliance were lack of knowledge about foot hygiene and absence of free hydrocelectomy campaign. This implies that despite being aware, the campaign does not reach individuals at their communities. But also others said the higher cost of surgery and lack of money as the reason for not participating. A previous study reported that most of the hydrocele patients mentioned that the main reasons for refusing hydrocelectomy is lack of money and cost of surgery and fear of death (Kumari *et al.*, 2005). The current study indicated that few of respondents expressed fear of hydrocelectomy complications like sterility,

impotence and death. This study suggests that knowledge about supportive interventions of hydrocelectomy and/or foot hygiene should be emphasized more in order to encourage the individual to participate more. There should also be proper organization of the health campaigns at the community level that will reach individuals at their community.

The majority of the individuals in the study area participated in the usage of insecticide-treated nets. Reasons given for their participation were that they understood the risk of mosquito bites that it leads to transmission of malaria and LF prevents disturbance caused by mosquitoes at night and dangerous insects like millipedes. Reported reasons for non-compliance included; dilapidated bed nets, not having enough bed nets, poor distribution network and absence during distribution. A previous study reported that the main reasons for the community not utilizing LLINS were lack of enough space, forgetting to put up the net, net not fitting, too hot weather and allergy-like reaction (Nuwamanya *et al.*, 2018). The findings in the current study indicate that there is still less emphasis and limited health education, correcting myths and misconceptions about the drugs used in MDA program, hydrocelectomy and some of the mosquito control interventions such as insecticide treated nets.

CHAPTER SIX

6.0 CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the conclusions and recommendations of the study done in Kibaha district.

6.1 Conclusions

This study found that the prevalence of CFA is 0.3% in Kibaha district. This shows that there is a drop in the prevalence of LF which was previously reported to be 4.1% and the district named as one among hotspots with persistent transmission.

Majority of individuals in the study area have shown that they participate or comply with possible LF interventions that aim to disrupt transmission. Reasons for their compliance were that they understood personal risk of LF and benefits of possible LF interventions. However, there are few individuals who are noncompliant. Moreover, participation of individuals in supportive interventions like hydrocelectomy and / or foot hygiene was found to be low because of lack of knowledge about foot hygiene and absence of free hydrocelectomy campaigns. Therefore knowledge of the disease and the benefits of possible interventions were shown to be determinants to compliance or noncompliance to interventions.

6.2 Recommendations

This study has several recommendations that may be considered to improve of LF interventions in Kibaha district as follows;

- Public health education should be strengthened so as to improve the level of knowledge about filariasis and benefits of community participation in LF interventions like LF-MDA, mosquito control measures and other supportive intervention like hydrocelectomy and foot hygiene practices.
- There is a necessity to provide incentives and knowledge about foot hygiene practices to Community Health workers and consider engaging them to provide supervision at the community level.

- There is a need for further study using more sensitive diagnostic tools like molecular xenomonitoring and anti-filarial antibody of school children to identify active transmission.

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APPENDICES

Appendix I: Consent Form for primary school children (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



DIRECTORATE OF RESEARCH AND PUBLICATIONS

INFORMED CONSENT FORM FOR PRIMARY SCHOOL CHILDREN

ID-NO:/...../.....

Consent for participation in the research study

A greeting, my name is **Franco Ngonya** (MSc. Parasitology and medical entomology) from **MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES**. At the moment, I am carrying out a study to investigate ***“COMMUNITY COMPLIANCE TO INTERVENTIONS FOR LYMPHATIC FILARIASIS ELIMINATION MORBIDITY MANAGEMENT AND DISABILITY PREVENTION IN KIBAHA DISTRICT TANZANIA”***.

Purpose of the study

This study aims to assess the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district Tanzania.

What Participation Involves

If you agree to participate in this study the following will occur;

1. A small amount of blood sample, 100µl will be taken through finger pricking to determine the presence of CFA.
2. No identifying information such as name will be collected from you during this blood collection, except your gender, age, and village name.

3. A blood sample be drawn only once for approximately 5 minutes in a private setting

Confidentiality

The collected information will be kept confidential, identification numbers will be used instead of names. An only an investigator working in this research study will have access to the information.

Benefits

If you agree to take part in this study, the information you provide will be very important and valuable. It will help to determine the persistence of transmission of LF in Kibaha District Tanzania. Research findings will also provide informed practical information that will aid in planning and implementing effective strategies to improve and modify the LF control program toward elimination. But those who will be found with CFA will be directed to nearby health facilities for treatment.

Potential risks

During blood collection a small amount of blood sample, 100µl will be taken through finger pricking to determine the presence of CFA. Finger pricking could potentially make you feel little pain.

Rights to Withdraw and Alternatives

Your participation in this study is completely voluntary. If you choose not to participate in the study or if you decide to stop participating in the study you will not get any harm. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve loss of any benefits to which you are otherwise entitled.

In case of injury

We are not expected that any harm will occur as a result of your participation in this study.

Compensation

There will be no compensation of time spent during the blood collection; however, your participation is highly appreciated.

Contacts

If you have any questions about this study, you may contact the study Principal Investigator;
Franco Ngonya,
Muhimbili University of Health and Allied Sciences,
Mobile number: +255 768 858834.
Email: collins056franco@hotmail.com.

Also, you may contact;
Dr. Dinah B. Gasarasi (Supervisor of this study)
Muhimbili University of Health and Allied Sciences,
P. O. Box 65001, Dar es Salaam.
Mobile number: +255 715 301849 or +255 683 150380

Also, you may contact;
Dr. Bruno Sunguya
Director of Research and publication
Muhimbili University of Health and Allied Sciences,
P. O. Box 65001, Dar es Salaam.
Mobile number: +255-022-2152489

Signature

Do you agree to participate and answer questions in this study?

Participant Agrees [___]

Participant Disagree [___]

I _____ have read/understood the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of Participant _____

Signature of witness (if participant cannot read) _____

Signature of research assistant _____

Date of signed consent _____

Appendix II: Consent Form for primary school children (Swahili Version)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI



KURUGENZI YA UTAFITI NA MACHAPISHO

FOMU YA RIDHAA KWA WATOTO WA SHULE YA MSINGI

Namba ya Utambulisho..... /...../.....

Ridhaa ya kushiriki katika utafiti huu

Habari, jina langu ni **Franco Ngonya** (mwanafunzi wa shahada ya uzamili katika parasitolojia na entomolojia tiba) natoka **Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, Dar es Salaam**. Ninafanya utafiti wenye lengo la kuangalia **“JAMII KUZINGATIA, KUTOKOMEZA KUSIMAMIA MARADHI YA MATENDE NA MABUSHA NA KUZUIA ULEMAVU KATIKA WILAYA YA KIBAHA, TANZANIA”**.

Malengo ya utafiti

Utafiti huu unalenga kukusanya taarifa juu ya mambo yanayohusiana na kukubaliana na njia za kuziia na kutokomeza maambukizi ya matende na mabusha miongoni mwa wanajamii wanaoishi katika wilaya ya Kibaha.

Ushiriki unahusisha nini?

Ukikubali kushiriki katika utafiti huu yafuatayo yatatokea:

1. Kiasi kidogo cha damu, ujazo wa 100µl kitachukuliwa kwa kutoborewa kidole, kwa lengo la kutambua ueneaji wa vimelea vya ugonjwa wa matende na mabusha.
2. Hakuna taarifa zozote za utambulisho tutakazokusanya wakati wa usaili isipokua jinsia, umri, kiwango cha elimu, hali yako ya ndoa na kazi yako kwa sasa.

3. Utahojiwa mara moja tu kwa takriban dakika 30 kwenye sehemu ya faragha.

Usiri

Taarifa zitakazokusanywa zitahifadhiwa kwa siri, nambari za utambulisho zitatumika badala ya majina. Mtafiti anayehusika na utafiti huu ndio atakeyeweza fikia taarifa zilizokusanywa.

Faida

Kama unakubali kushiriki katika utafiti huu, taarifa unayotoa itakuwa muhimu sana na ya thamani. Itasaidia kujua usugu wa maambukizi ya ugonjwa wa matende katika wilaya ya Kibaha. Utafiti pia utatoa taarifa ambayo itakuwa msaada katika kupanga na kutekeleza mikakati madhubuti ili kuboresha na kurekebisha program ya udhibiti wa matende na mabusha. Kwa wale watoto watakao tambulika kuwa na vimelea vya wadudu ambavyo husababisha ugonjwa wa matende na mabusha watapelekwa hospital ya karibu kuanza matibabu.

Madhara

Katika kitendo cha uchukuaji damu, kiasi kidogo cha sampuli ya damu 100 µl kitachukuliwa kwa njia ya kutobolewa kidole. Kutobolewa kwa kidole kunaweza kupeleke mtu akahisi maumivu kiasi.

Haki ya kujitoa na mbadala wowote

Ushiriki wako katika utafiti huu ni wa hiari, kama utachagua kutokushiriki au utaamua kusimamisha ushiriki wako hutapata madhara yoyote. Unaweza kusimamisha kushiriki katika tafiti hii muda wowote hata kama ulisharidhia kushiriki. Kukataa kushiriki au kujitoa katika utafiti hakukufanyi upoteze stahili yoyote unayotakiwa kupata.

Endepo utaumia

Hatutegemei madhara yoyote kutokea kwa kushiriki kwako katika utafiti huu.

Fidia ya muda

Hakutakuwa na fidia ya muda uliotumika wakati wa kufanya kuchukuwa sampuli za damu katika utafiti huu, ijapokuwa ushiriki wako katika utafiti huu utashukuriwa na kuthaminiwa.

Watu wa kuwasiliana nao Kama una maswali katika utafiti huu usisite kuwasiliana na:

Franco Ngonya,

Chuo Kikuu cha Afyana Sayansi shirikishi Muhimbili,

Dar es Salaam.

Simu no: +255 768 858834.

Barua pepe: collins056franco@hotmail.com.

Pia unaweza kuwasiliana

Dr. Dinah B. Gasarasi, (Msimamizi wa utafiti huu)

Chuo Kikuu cha Afyana Sayansi shirikishi Muhimbili,

S.L.P 65001, Dar es Salaam.

Mobile number: +255 715 301849 or +255 683 150380.

Pia unaweza kuwasiliana

Dr. Bruno Sunguya

Mkurugenzi wa Utafiti na Machapisho

Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili,

P. O. Box 65001, Dar es Salaam.

Mobile number: +255-022-2152489

Sahihi

Mshiriki amekubali [__]

Mshiriki amekataa [__]

Mimi _____ nimesoma/nimeielewa hii fomu, maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki _____

Sahihi ya shahidi (kama hawezi kusoma na kuandika) _____

Sahihi ya mtafiti msaidizi _____

Tarehe ya makubaliano _____

Appendix III: Consent Form for community (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



DIRECTORATE OF RESEARCH AND PUBLICATIONS

INFORMED CONSENT FORM FOR COMMUNITY.

ID-NO:/...../.....

Consent for participation in the research study

A greeting, my name is **Franco Ngonya** (MSc. Parasitology and medical entomology) from **MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES**. At the moment, I am carrying out a study to investigate ***“COMMUNITY COMPLIANCE TO INTERVENTIONS FOR LYMPHATIC FILARIASIS ELIMINATION MORBIDITY MANAGEMENT AND DISABILITY PREVENTION IN KIBAHA DISTRICT TANZANIA”***.

Purpose of the study

This study aims to assess the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district Tanzania.

What Participation Involves

If you agree to participate in this study the following will occur;

1. You will sit with a trained interviewer and will be required to answer questions that have been prepared for the study through an interview in order to obtain the intended information. The interviewer will be recording your responses in the questionnaire.
2. No identifying information such as name will be collected from you during this interview, except your gender, age, level of education, marital status and your current occupation.
3. You will be interviewed only once for approximately 30 minutes in a private setting.

Confidentiality

The collected information will be kept confidential, identification numbers will be used instead of names. An only an investigator working in this research study will have access to the information.

Benefits

If you agree to take part in this study, the information you provide will be very important and valuable. It will help to assess the level of compliance with the identified interventions for LF elimination and the underlying reasons for community compliance and non-compliance in Kibaha District Tanzania. Research findings will also provide informed practical information that will aid in planning and implementing effective strategies to improve and modify the LF control program toward elimination.

Potential risks

You will be asked questions about your personal particulars and understanding regarding lymphatic filariasis interventions. Some questions could potentially make you feel uncomfortable. You may refuse to answer any particular question and may stop the interview at anytime.

Rights to Withdraw and Alternatives

Your participation in this study is completely voluntary. If you choose not to participate in the study or if you decide to stop participating in the study you will not get any harm. You can stop participating in this study at any time, even if you have already given your consent. Refusal to participate or withdrawal from the study will not involve loss of any benefits to which you are otherwise entitled.

In case of injury

We are not expected that any harm will occur as a result of your participation in this study.

Compensation

There will be no compensation of time spent during the interview or focused group discussion; however, your participation is highly appreciated.

Contacts

If you have any questions about this study, you may contact the study Principal Investigator;
Franco Ngonya,
Muhimbili University of Health and Allied Sciences,
Mobile number: +255 768 858834.
Email: collins056franco@hotmail.com.

Also, you may contact;
Dr. Dinah B. Gasarasi (Supervisor of this study)
Muhimbili University of Health and Allied Sciences,
P. O. Box 65001, Dar es Salaam.
Mobile number: +255 715 301849 or +255 683 150380

Also, you may contact;
Dr. Bruno Sunguya
Director of Research and publication
Muhimbili University of Health and Allied Sciences,
P. O. Box 65001, Dar es Salaam.
Mobile number: +255-022-2152489

Signature

Do you agree to participate and answer questions in this study?

Participant Agrees [__]

Participant Disagree [__]

I _____ have read/understood the contents in this form. My questions have been answered. I agree to participate in this study.

Signature of Participant _____

Signature of witness (if participant cannot read) _____

Signature of research assistant _____

Date of signed consent _____

Appendix IV: Consent Form for community (Swahili Version)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI



KURUGENZI YA UTAFITI NA MACHAPISHO

FOMU YA RIDHAA KWA JAMAA/ JAMII YA WATU WAZIMA

Namba ya Utambulisho.... /...../.....

Ridhaa ya kushiriki katika utafiti huu

Habari, jina langu ni **Franco Ngonya**(mwanafunzi wa shahada ya uzamili katikaparazitolojia na entomolojia tiba) natoka **Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, Dar es Salaam**. Ninafanya utafiti wenye lengo la kuangalia “**JAMII KUZINGATIA, KURINGILIA KATI KUTOKOMEZA KUSIMAMIA MARADHI YA MATENDE NA MABUSHA NA KUZUIA ULEMAVU KATIKA WILAYA YA KIBAHA, TANZANIA.**”

Malengo ya utafiti

Utafiti huu unalenga kukusanya taarifa juu ya mambo yanayohusiana na njia za kuzuia na kutokomeza maambukizi ya matende na mabusha miongoni mwa wanajamii wanaoishi katika wilaya ya Kibaha.

Ushiriki unahusisha nini?

Ukikubali kushiriki katika utafiti huu yafuatayo yatatokea:

1. Utakaa na mtafiti alipewa mafunzo jinsi ya kuhoji na utatakiwa kujibu maswali ambayo tayari yameshaandaliwa kwa ajili ya utafiti kwa njia ya mahojiano ili kupata taarifa iliyokusudiwa. Mtafiti atakuwa ananukuu majibu yako katika dodoso.

2. Hakuna taarifa zozote za utambulisho tutakazokusanya wakati wa usaili isipokua jinsia, umri, kiwango cha elimu, hali yako ya ndoa na kazi yako kwa sasa.
3. Utahojiwa mara moja tu kwa takriban dakika 30 kwenye sehemu ya faragha.

Usiri

Taarifa zitakazokusanywa zitahifadhiwa kwa siri, nambari za utambulisho zitatumika badala ya majina. Mtafiti anayehusika na utafiti huu ndio atakeyeweza fikia taarifa zilizokusanywa.

Faida

Kama unakubali kushiriki katika utafiti huu, taarifa unayotoa itakuwa muhimu sana na ya thamani. Itasaidia kutathmini kiwango cha uzingatiaji wa njia maalumu za kuingilia kati na kutokomeza ugonjwa wa matende na mabusha na pia kutambua sababu za msingi zinazo pelekea kuzingatia au kutozingatia njia maalumu za kuingilia kati na kutokomeza ugonjwa wa matende na mabusha katika wilaya ya Kibaha. Utafiti pia utatoa taarifa ambayo itakuwa msaada katika kupanga na kutekeleza mikakati madhubuti ili kuboresha na kurekebisha program ya udhibiti wa matende na mabusha.

Madhara

Utaulizwa maswali juu ya ufahamu, mwelekeo na mitizamo yako kuhusu ugonjwa wa matende na mabusha. Baadhi ya maswali yanaweza kukufanya usijisikie vizuri hivyo unaweza kukataa kujibu swali lolote na unaweza kusimamisha usaili wakati wowote.

Haki ya kujitoa na mbadala wowote

Ushiriki wako katika utafiti huu ni wa hiari, kama utachagua kutokushiriki au utaamua kusimamisha ushiriki wako hutapata madhara yoyote. Unaweza kusimamisha kushiriki katika tafiti hii muda wowote hata kama ulisharidhia kushiriki. Kukataa kushiriki au kujitoa katika utafiti hakukufanyi upoteze stahili yoyote unayotakiwa kupata.

Endepo utaumia

Hatutegemei madhara yoyote kutokea kwa kushiriki kwako katika utafiti huu.

Fidia ya muda

Hakutakuwa na fidia ya muda uliotumika wakati wa kufanya mahojiano au majadiliano katika utafiti huu, ijapokuwa kuwa ushiriki wako katika utafiti huu utashukuriwa na kuthaminiwa.

Watu wa kuwasiliana nao Kama una maswali katika utafiti huu usisite kuwasiliana na:

Franco Ngonya,

Chuo Kikuu cha Afya Muhimbili,

Simu no: +255 768 858834.

Barua pepe: collins056franco@hotmail.com.

Pia unaweza kuwasiliana

Dr. Dinah B. Gasarasi, (Msimamizi wa utafiti huu)

Chuo Kikuu cha Afya Muhimbili,

S.L.P 65001, Dar es Salaam.

Mobile number: +255 715 301849 or +255 683 150380.

Pia unaweza kuwasiliana

Dr. Bruno Sunguya

Mkurugenzi wa Utafiti na Machapisho

Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili,

P. O. Box 65001, Dar es Salaam.

Mobile number: +255-022-2152489

Sahihi

Mshiriki amekubali

Mshiriki amekataa

Mimi _____ nimesoma/nimeielewa hii fomu, maswali yangu yamejibiwa. Nakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki _____

Sahihi ya shahidi (kama hawezi kusoma na kuandika) _____

Sahihi ya mtafiti msaidizi _____

Tarehe ya makubaliano _____

Appendix V: Blood analysis form, (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



DIRECTORATE OF RESEARCH AND PUBLICATIONS

BLOOD ANALYSIS FOR CFA USING FTS TEST FORM FOR STANDARD ONE SCHOOL CHILDREN AGE 7.

Form No.....Village..... Hamlet.....Date.....

1. Name..... ID No

2. Gender: 1.Female 2. Male

3.Age.....

4.How long have you been in this village?

- (1) Less than 6months
- (2) 6months – 1year
- (3) 1 to 5years
- (4) Greater than 5 years

If the answer is **(1)** end of the interview

5.Have you ever taken drugs for Lymphatic filariasis?

- (1) No
- (2) Yes
- (3) I don't know

If the answer is (1), Please proceed to question No.6. If the answer is YES, End of Interview

6. Blood examination

A) Test for CFA, using FTS

Time	Results*	Remarks
	0 []	
	1 []	
	2 []	

*Grading: 0=negative, 1=weak positive (test line less strong than the control line),
2=strong positive (test line stronger than the control line).

Principal investigator (PI)signature.....Date.....

Lab. Technician.....signature.....Date.....

Appendix VI: Uchunguzi wa damu (Swahili Version)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI



KURUGENZI YA UTAFITI NA MACHAPISHO

Uchunguzi wa vimelea vya ugonjwa kwenye damu kwa kipimo cha FTS kwa watoto wa shule wa darasa la kwanza miaka 7.

Namba ya fomu..... Kijiji kitongojiTarehe.....

1. Jina

2. Jinsia: 1. Mke

2. Mme

3. Umri

4.Ni kwa muda gani umeishi katika kijiji hiki?

(1) Chini ya miezi 6

(2) Kati ya miezi 6 – mwaka 1

(3) Kati ya mwaka 1 –miaka 5

(4) Zaidi ya miaka 5

Ikiwa jibu ni (1), Mwisho wamahojiano.

5. Je, ulisha wahi kupata dawa za Matende au mabusha?

(1) Hapana

(2) Ndiyo

(3) Sifahamu

Ikiwa jibu ni Hapana, tafadhali endelea na swali namba 6. Ikiwa jibu ni NDIYO

Mwisho wa Mahojiano

6. Blood examination

A) Test for CFA, using FTS

Muda	majibu*	maelezo
	0 []	
	1 []	
	2 []	

*Grading: 0=negative, 1=weak positive (test line less strong than the control line),
2=strong positive (test line stronger than the control line).

Jina la mpimajisahihi..... Tarehe.....

Jina la mtaalamu wa maabarasahihi.....Tarehe.....

Appendix VII: Community household survey questionnaire form

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



DIRECTORATE OF RESEARCH AND PUBLICATIONS

Community Household Survey Questionnaire Form

Introduction Statement:

My name is **Franco Ngonya** from **Muhimbili University of Health and Allied Sciences**, Dar es Salaam. At the moment I am carrying a study titled “**COMMUNITY COMPLIANCE TO INTERVENTIONS FOR THE ELIMINATION AND MORBIDITY MANAGEMENT OF LYMPHATIC FILARIASIS IN KIBAHA DISTRICT TANZANIA.**”.

This study aims to assess the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district.

Identification

CODE	QUESTION	RESPONSE AND CODING
0	Questionnaire ID no	
1	Number of Household	
2	Name of Interviewer	
3	Date of Interview	

A.Social Demographic characteristics of the participant

1. Ward Name..... 2.Village Name.....

3. Hamlet..... 4. Age

5. Gender

1. Female

2. Male

6.Marital status

(6.1)Married

(6.2) Single

(6.3) Divorced

(6.4) Cohabiting

(6.5) Widowed

7.Education level

(7.1) Never attended school

(7.2) Pre-primary and Madras

(7.3) Primary not completed

(7.4) Primary completed

(7.5) Secondary

(7.6)Post-secondary training

(7.7) University

8. Occupation

(8.1) Farmer, subsistence farming

(8.2) Animal husbandry

(8.3) Business

(8.4) Employed

(8.5) Unemployed

If the answer is (8.4)put specifyoccupation

9.Duration of stay lived in the village

(9.1) Less than 1 year

(9.2) 1 to 5 years

(9.3)Greater than 5 years

If the answer is (9.1) End of interview.

B.To determine the level of awareness on LF interventions

1. Have you ever heard of lymphatic filariasis MDA?

(1.1) Yes

(1.2) No

If the answer is (1.1) proceed with the next question no. 2 and if the answer is (2) go to part C.

2. Where did you hear about lymphatic filariasis MDA?

(2.1) Heard from friend or neighbor

(2.2) Heard about it on the radio

(2.3) Heard about it on the television

(2.4) Saw poster or pamphlet

(2.5) Heard about it from a health worker

(2.6) Other (specify).....

3. How long do LF treatment cycles take place?

(3.1) Each year

(3.2) After 2 years

(3.3) More than 3 years

(3.4) I don't know

4. Who is eligible to take tablets during LF MDA?

(4.1) Every one

(4.2) Individuals aged five years and above

(4.3) Children below 5 years

(4.4) Pregnant women

(4.5) Individuals with elephantiasis and hydrocele

(4.6) Don't know

5. Are there any community-based lymphatic filariasis interventions organized by the village government/Health Committee? If YES please mention, proceed with question 5. If NO please go to section C

- (5.1) Mobilizing and distribution of Ivermectin and albendazole
- (5.2) Mobilizing LLINS usage
- (5.3) Mobilizing mobility management, hydroceletomy, and foot hygiene

C.To assess compliance withthe MDA Program

1. Have you ever participatedinthe MDA program?

- (1.1) Yes
- (1.2) No

If the answer is (1.2) proceed to question no.2, if the answer is (1.2) go to questionno.6

2. How many times do you participate in the MDA program?

- (2.1)Once
- (2.2) More than once
- (2.3) I don't know

3. How many times do you swallow the drugs during MDA programs?

- (3.1) Once
- (3.2) More than once
- (3.3) Never

If the answer is (3.3) go to question no.6

4. When did you last swallow the drug?

- (4.1) Last year
- (4.2) Last two years past
- (4.3) I don't remember

5. If you took the medication in the last treatment cycle what were the reasons for compliance?

(5.1) Understanding the personal risk of LF and the benefits of MDA.

(5.2) Good delivery mechanisms

(5.3) Recipient's personal situation.

(5.4) Prior experience with MDA

(5.5) Other specify.....

6. If you did not take the medication in the last treatment cycle what were the reasons for noncompliance

(6.1) Absent during distribution

(6.2) My condition does not allow

(6.3) Tablets not distributed

(6.4) Not informed about distribution

(6.5) Do not like about tablets

(6.6) Worried about side effects

(6.7) Don't think tablets are effective

(6.8) Have taken alcohol

If the answer is (6.2) specify.....

D.To assess the level of awareness and compliance to mosquito control interventions

1.How the lymphatic filariasis is transmitted?

(1.1) Mosquito bites

(1.2) Walking barefooted

(1.3) Stepping in dirty water

(1.4) Adultery

(1.5) Sleeping with a woman in menstruation

(1.6) Witchcraft

(1.7) Inheritance

(1.8) I don't know

2. What mosquito control measure of LF elimination have you ever heard about?

(2.1) LLINS

(2.2) Residual spraying

(2.3) Environmental modification

(2.4) Both 1, 2 and 3

(2.5) I don't know

3. Where did you hear about use mosquito control measure for LF elimination?

(3.1) Heard from friend or neighbor

(3.2) Heard about it on the radio

(3.3) Heard about it on the television

(3.4) Saw poster or pamphlet

(3.5) Heard about it from a health worker

(3.6) Other (specify).....

4. Who is eligible to use the mosquito control measure?

(4.1) Patients only

(4.2) Health individuals only

(4.3) All individuals

(4.4) I don't know

5. How often have you slept in LLINs?

(5.1) Every night

(5.2) Not regularly

(5.3) Never

6. How often have you used residual spraying?

(6.1) More often

(6.2) Less often

(6.3) Never

7. How often have you participated in the environmental modification?

(7.1) More often

(7.2) Less often

(7.3) Never

8. The reasons for compliance with mosquito control intervention?

(8.1) Awareness and knowledge about LF

(8.2) Understanding the risk of mosquito bites

(8.3) Mosquitodisturbance

(8.4) Availability of possible mosquito control measure

9. The reasons for non- compliance to mosquito control intervention?

(9.1) Poor program setting

(9.2) Fear of side effect

(9.3) I don't think mosquito control interventions are effective

(9.4) Absent during the program

If the answer is (9.1) specify.....

Closing component

Thank you for your time

Appendix VIII: Household Questionnaires (Swahili version)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI



KURUGENZI YA UTAFITI NA MACHAPISHO

Utambulisho

Habari! Jina langu ni **Franco Ngonya** (mwanafunzi wa shahada ya uzamili katika parasitolojia na entomolojia tiba) natoka **Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili**, Dar es salaam. Ninafanya utafiti wenye lengo la kuangalia “**JAMII KUZINGATIA, KURINGILIA KATI KUTOKOMEZA KUSIMAMIA MARADHI YA MATENDE NA MABUSHA NA KUZUIA ULEMAVU KATIKA WILAYA YA KIBAHA, TANZANIA**”.

Utafiti huu unalenga kukusanya taarifa juu ya mambo yanayohusiana na kukubaliana na njia za kuzuia na kutokomeza maambukizi ya matende na mabusha miongoni mwa wanajamii wanaoishi katika wilaya ya Kibaha

Utambulisho

MSIMBO	SWALI	JIBU NA MSIMBO
0	Namba ya utambulisho ya hojaji	
1	Namba ya kaya	
2	Jina la mhojaji	
3	Tarehe ya mahojiano	

A.Taarifa za Kidemografia kijamii

1. Jina la kata..... 2. **Jina** la kijiji.....
3. Kitongoji 4. Umri.....

5. Jinsi 1. Mke 2. Mme

6.Hali ya ndoa

- (6.1) Ndoa
(6.2) hajaoa/aolewa
(6.3) Talaka
(6.4) Kimada
(6.5) Mjane/ mgane

7.Kiwango cha elimu

- (7.1)Hajawahi kwenda shule
(7.2) Elimu ya awali na madrasa
(7.3) Hajamaliza elimu ya msingi
(7.4) Elimu ya msingi
(7.5) Elimu ya sekondari
(7.6) Elimu ya ufundi
(7.7) Elimu ya juu

8. Kazi inayokuingizia kipato

- (8.1) Mkulima
(8.2) Mfugaji
(8.3) Mfanyabiashara
(8.4) Umejiriwa

(8.5) Sina ajira

Kama jibu ni (8.4)eleza kazi maalumu.....

9.Muda ulioishi katika kijiji hiki

(9.1)Chini ya mwaka 1

(9.2) Miaka 1mpaka 5

(9.3) Miaka zaidi ya 5

Kama jibu ni (9.1) Mwisho wa mahojiano.

B.Kutambua mpango wa utoaji dawa za ugonjwa wa matende na mabusha

1. Je umewahi kusikia kuhusu mpango wa utoaji dawa za matende na mabusha?

(1.1) Ndio

(1.2) Hapana

Kama jibu ni (1.1) endelea na swali namba 2.Na kamajibu ni (1.2), nenda swali namba 6.

2. Je, umesikia kuhusu Mpango wa utoaji wa Dawa kwa ajili ya kutokomeza ugonjwa wa matende na mabusha kutoka kwa nani?

(2.1)Rafiki / jirani

(2.2) Redio

(2.3) Luninga

(2.4) Mabango na vipeperushi

(2.5) Mfanyakazi wa afya

(2.6) Mengineyo (elezea)

3. Dawa za ugonjwa wa matende na mabusha zinatolewa baada ya muda gani katika kampeni ya kutokomeza ugonjwa wa matende na mabusha?

(3.1) Kila mwaka mara moja

(3.2) Kila baada ya miaka 2

(3.3) Zaidi ya miaka 3

4. Nani anapaswa kunywa dawa zinatolewa kwenye kampeni ya kutokomeza ugonjwa wa matende na mabusha?

(4.1)Watu wote

(4.2) Watu wenye umri miaka 5 na kuendelea

(4.3) Watoto wenye umri chini ya miaka

(4.4) Wajawazito

(4.5) Watu wenye matende na mabusha

(4.6) Sijui

5. Je kuna huduma zozote za kupambana na Ugonjwa wa matende na mabusha zinazotolewa na serikali ya kijiji? Kama NDIYO ni huduma gani? (Endelea no. 5).Kama HAPANA nenda sehemu C.

(5.1) Uhamasishaji na ugawaji dawa za matende

(5.2) Uhamasishaji wa kutumia vyandarua vya dawa

(5.3) Uhamasishaji wa kupuguza maradhi (upasujaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende)

C.Kutathmini kukubaliana na Mpango wa Utoaji wa Dawa za Matende na Mabusha

1. Je, umewahi kushiriki kwenye mpango wa utoaji wa dawa za matende na mabusha?

(1.1) Ndio

(1.2) Hapana

Kama jibu ni (1.1) endelea na swali namba 2, kama jibu ni (1.2)nenda swali namba 6

2. Je, umeshiriki mara ngapi kwenye mpango wa utoaji wa dawa za matende na mabusha?

(2.1) Mara moja

(2.2) Zaidi ya mara moja

(2.3) Sikumbuki

3. Je umeshawahi kumeza vidoge mara ngapi vinavyotolewa na mpango wa utoaji wa dawa za matende na mabusha?

(3.1) Mara moja

(3.2) Zaidi ya mara moja

(3.3) Sijawahi meza

Kama jibu ni (3.3) nenda swali namba .6

4. Lini ilikuwa mara ya mwisho kwako kumeza Dawa?

(4.1) Mwaka jana

(4.2) Miaka miwili iliopita

(4.3) Sikumbuki

5. Je ni sababu zipi zilikufanya umeze dawa katika mpango wa utoaji dawa za kuzuia mabusha na matende?

(5.1) Kujua madhara ya ugonjwa wa mabusha na faida za utoaji dawa za kuzuia matende na mabusha.

(5.2) Huduma nzuri katika utoaji dawa

(5.3) Hali yako kipindi cha utoaji dawa.

(5.4) Uzoefu wa umezaji dawa kwenye shughuli za utoaji dawa za kuzuia mabusha na matende

(5.5) Mengineyo (elezea)

6. Je ni sababu zipi zilikupelekea usiweze kunywa dawa kipindi cha utoaji dawa za matende?

(6.1) Kutokuwepo kipindi cha utoaji dawa za matende

(6.2) Hali yako hakuruhusu unywe dawa

(6.3) Dawa hazikutolewa

(6.4) Sikujulishwa kipindi dawa zilipokuwa zinatolewa

(6.5) Sipendi kunywa dawa

(6.6) Naogopa madhara yaletwayo na unywaji wa dawa hizo

(6.7) Sina imani na uwezo wa dawa kutibu

(6.8) Nilikunywa pombe

Kama jibu ni (6.2) tafadhali toa maelezo zaidi.....

D.Kutambua na Kutathmini kukubaliana na njia za udhibiti Mbu

1. Je ugonjwa wa matende na mabusha unaenezwa kwa njia ipi?

(1.1) Kungwatwa na Mbu

(1.2) Kutembea pekupeku (pasipo viatu)

(1.3) Kukanyaga maji machafu

(1.4) Kufanya zinaa

(1.5) Kufanya tendo la ndoa na mwanamke aliyekwenye siku zake

(1.6) Ushirikina

(1.7) Sijui

2. Je njia zipi za kuzuia Mbu, zinazotumika kutokomeza ugonjwa wa matende na mabusha umewahi zisikia?

(2.1) Vyandarua vyenye dawa

(2.2) Kupuliza dawa ya kuuwa mbu kwenye jamii

(2.3) Usafishajiwa mazingira kudhiti mazalia ya mbu

(2.4) Jibu ni 1, 2 na 3

(2.5) Sijui

3. Je, umesikia kuhusu Mpango wa kuzuia Mbu kwa ajili ya kutokomeza ugonjwa wa matende na mabusha kutoka kwa nani?

(3.1) Rafiki / jirani

(3.2) Redio

(3.3) Luninga

(3.4) Mabango na vipeperushi

(3.5) Mfanyakazi wa afya

(3.6) Mengineyo (elezea)

4. Je ni nani anastahili kutumia njia za kudhibiti Mbu?

(1) Wagonjwa pekee

(2) Watu wenye afya

(3) Kila mtu

(4) Sijui

5. Mara ngapi unalala kwenye chandarua chenye dawa?

(1) Kila usiku

(2) Sio mara kwa mara

(3) Sijawahi

6. Mara ngapi unatumia njia ya kupuliza dawa kwenye makazi?

(1) Mara kwa mara

(2) Mara chache

(3) Sijawahi

7. Mara ngapi umeshiriki katika usafishaji wa mazigira kudhibiti madharia ya mbu?

(1) Mara nyingi

(2) Mara chache

(3) Sijawahi

8. Sababu zipi zinakufanya uweze kushirika katika mipango ya kudhibiti mbu?

(1) Ufahamu na maarifa kuhusu ugonjwa wa matende na mabusha

(2) Kuelewa madhara ya kung'atwa na mbu

(3) Usumbufu usababishwao na mbu

(4) Kuwepo kwa njia za kudhibiti mbu katika jamii husika

9. Je ni sababu zipi zinazo kufanya kutoshiriki katika mpango wa kudhibiti mbu?

(1) Uandaji mbovu wa mipango ya udhibiti mbu

(2) Hofu ya madhara yaletwayo na njia za udhibiti

(3) Sina imani na uwezo wa njia za udhibiti mbu

(4) Kutokuwepo kipindi cha uendeshaji wa mpango wa udhibiti wa Mbu

Kama jibu ni (1) tafadhali elezea.....

MWISHO

Appendix IX: Focus group discussions guide (English Version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



DIRECTORATE OF RESEARCH AND PUBLICATIONS

PATIENT OF HYDROCEL AND ELEPHANTIASIS FGDS

Introduction to participate in this study

My name is **Franco Ngonya** from **Muhimbili University of Health and Allied Sciences, Dar es Salaam**. At the moment I am carrying a study to determine ***“COMMUNITY COMPLIANCE TO INTERVENTIONS FOR LYMPHATIC FILARIASIS ELIMINATION MORBIDITY MANAGEMENT AND DISABILITY PREVENTION IN KIBAHA DISTRICT TANZANIA.”***

The purpose of the study

This study aims to assess the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district Tanzania.

Introduction

Place of discussion

1. ID Number...../...../.....
2. District name.....
3. Village.....
4. Number of participants.....
5. Profile of participants.....
6. Name of facilitator.....
7. Date/...../.....

Questions

Hydrocoelectomy and/or foot hygiene questions

1. How many people of this community have ever heard about Hydrocoelectomy and/or foot hygiene camps?

Probes;

- 1.1 What is the local term used to describe hydrocoelectomy and/ or foot hygiene camps?
 - 1.2 When do you heard about hydrocoelectomy and/ or foot hygiene program?
- 2 How many people participated in the last hydrocoelectomy and/ or foot hygiene camps?

Probes;

- 2.1 When and how do you participate in hydrocoelectomy and/ or foot hygiene?
 - 2.2 What lead you to participate in hydrocoelectomy and/ or foot hygiene?
- 3 How many of you comply with hydrocoelectomy and/ or foot hygiene as one of LF intervention?

Probes;

- 3.1 How long do you comply with hydrocoelectomy and/ or foot hygiene?
- 3.2 Why do you either comply or not with hydrocoelectomy and or foot hygiene?

Closing component

Thank you for your time

Appendix X: Focus group discussion guide (Swahilis version)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI



**KURUGENZI YA UTAFITI NA MACHAPISHO
MWONGOZO WA MAJADILIANO YA KIKUNDI LENGU CHA WAGONJWA WA
MABUSHA NA MATENDE**

Utambulisho katika utafiti huu

Habari! Jina langu ni Franco Ngonya (mwanafunzi wa shahada ya uzamili katika parasitolojia na entomolojia tiba) natoka Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, Dar es salaam. Ninafanya utafiti wenye lengo la kuangalia **“JAMII KUZINGATI, KUINGILIA KATI KUTOKOMEZA KUSIMAMIA MARADHI YA MATENDE NA MABUSHA NA KUZUIA ULEMAVU KATIKA WILAYA YA KIBAHA, TANZANIA”**.

Utangulizi

Mahali pa majadiliano.....

1. Namba ya utambulisho/...../.....
2. Kijiji.....
3. Kata.....
4. Namba ya mshiriki.....
5. Jina la anayehoji.....
6. Tarehe/...../.....

Maswali

Upasuaji wa mabusha na usafi wa miguu

1. Je, watu wa ngapi katika hii jamii mumewahi kusikia kuhusu shughuli za upasuaji wa mabusha na usafi wa miguu wa mgonjwa wa matende?

Dodosa:

- 1.1 Je, ni jina lipi linatambulika katika hii jamii linalo maanisha shughuli za upasuaji wa mabusha na usafi wa miguu wa wagonjwa wa matende?
- 1.2 Je, ni lini ulishiriki kwenye shughuli za upasuaji wa mabusha na usafi wa miguu ya wagonjwa wa matende?
- 2 Je, ni watu wa ngapi mliweza kushiriki kwenye shughuli hizo za upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?

Dodosa:

- 2.1 Je, ni lini na ni namna gani ulishiriki katika hizo shughuli za upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?
- 2.2 Je, ni kitu gani kilikusukuma/ kushawishi uweze kushiriki katika shughuli za upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?
- 3 Je, ni watu wa ngapi mnazingatia shughuli za upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?

Dodosa:

- 3.1 Je, kwa muda gani umekuwa ukizingatia/ kufuata shughuli za upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?
- 3.2 Je, sababu zipi zinakufanya uzingatie au kutozingatia shughuli za upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?

Kufunga

Asante kwa muda wako.

Appendix XI: Focused group discussion guide (English version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES



DIRECTORATE OF RESEARCH AND PUBLICATIONS

COMMUNITY FOCUS GROUP DISCUSSIONS

Introduction

My name is **Franco Ngonya** from **Muhimbili University of Health and Allied Sciences**, Dar es Salaam. At the moment I am carrying a study to determine ***“COMMUNITY COMPLIANCE TO INTERVENTIONS FOR LYMPHATIC FILARIASIS ELIMINATION MORBIDITY MANAGEMENT AND DISABILITY PREVENTION IN KIBAHA DISTRICT TANZANIA.”***

The purpose of the study

This study aims to assess the level of compliance to identified interventions for the elimination and morbidity management of lymphatic filariasis in Kibaha district Tanzania.

Introduction

Place of discussion

1. ID Number...../...../.....
2. District name.....
3. Village.....
4. Number of participants.....
5. Profile of participants.....
6. Name of facilitator.....
7. Date/...../.....

Questions

AWARENESS'S TO LF INTERVENTIONS

1. Are there any existing LF interventions in this community?

Probes:

1.1 What about MDA program?

1.2 What about mosquito control intervention?

1.3 What about Hydrocoelectomy and/or foot hygiene camps?

COMPLIANCE TO LF INTERVENTION

2 Do you ever comply with MDA?

Probe:

2.1 When was the last time you swallowed drugs

3 Do you comply with mosquito control intervention?

Probe:

3.1 Do you sleep in LLINs?

3.2 Do you participate in a cleaning environment?

3.3 Do you participate in indoor residual spraying?

4 Do you comply with Hydrocoelectomy and/or foot hygiene?

Probe:

4.1 Do you participate in Hydrocoelectomy?

4.2 Do you participate in foot hygiene?

REASONS TO COMPLIANCE TO LF INTERVENTION

5 What are underlying reasons for compliance or non-compliance in MDA

Probe:

5.1 Why do you comply with MDA?

5.2 Why you don't comply with MDA?

6 What are the reasons for compliance or non-compliance in mosquito control intervention?

Probe:

6.1 Why do you comply with mosquito control measures such as (1) LLINS (2) Clean environment and (3) Indoor residual spraying?

6.2 Why you don't comply with mosquito measures such as (1) LLINS, (2) Clean environment and (3) Indoor residual spraying?

7 What are the reasons for compliance or non-compliance with Hydrocoelectomy and/or foot hygiene?

Probe:

7.1 Why do you participate in hydrocoelectomy and/ or foot hygiene?

7.2 Why you don't participate in hydrocoelectomy and/ or foot hygiene?

Closing component

Thank you for your time

Appendix XII: Focused group discussion guide (Swahilis version)

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI



KURUGENZI YA UTAFITI NA MACHAPISHO

MWONGOZO WA MAJADILIANO YA KIKUNDI LENGU KWENYEJAMIII

Utambulisho katika utafiti huu

Habari! Jina langu ni **Franco Ngonya** (mwanafunzi wa shahada ya uzamili katika parasitolojia na entomolojia tiba) natoka Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili, Dar es salaam. Ninafanya utafiti wenye lengo la kuangalia “**JAMII KUZINGATIA KUIINGILIA KATI KUTOKOMEZA KUSIMAMIA MARADHI YA MATENDE NA MABUSHA NA KUZUIA ULEMAVU KATIKA WILAYA YA KIBAHA, TANZANIA**”.

Utangulizi

Mahali pa majadiliano.....

1. Namba ya utambulisho/...../.....
2. Kijiji.....
3. Kata.....
4. Namba ya mshiriki.....
5. Jina la anayehoji.....
6. Tarehe/...../.....

Maswali

UFAHAMU NAMNA ZA KUZUIA UGONJWA WA MATENDE NA MABUSHA

1. Je kuna njia za kuzuia maambukizi ya ugonjwa wa matende na mabusha kwenye hii jamii?

Dodosa:

- 1.1 Vipi kuhusu mpango wa utoaji dawa za matende na mabusha?
- 1.2 Vipi kuhusu mipango ya kudhibiti Mbu?

1.3 Vipi kuhusu shughuli za upasuaji wa mabusha na usafi wa miguu?

KUKUBALIANA NA NJIA ZA KUZUIA MATENDE NA MABUSHA

2 Je unakubalianana mpango wa utoaji dawa za matende na mabusha?

Dodosa:

2.1 Lini ilikuwa mara ya **mwishokunywa** dawa?

3 Je, umewahi husika kwenye mipango ya kudhibiti mbu?

Dodosa:

3.1 **Je**, unalala kwenye chandarua chenye dawa?

3.2 **Je**, kushiriki kwenye kusafisha mazingira kupunguza mazalia ya mbu?

3.3 **Je**, umewahi shiriki kwenye upulizaji wa dawa za kuuwa mbu?

4 Je unakubaliana na upasuaji wa upasuaji wa mabusha na usafi wa miguu kwa wagonjwa wa matende?

Dodosa:

4.1 **Je**, umewahikushiriki kwenye upasuaji wa mabusha?

4.2 **Je**, umewahi kushiriki kwenye usafi wa miguu kwa wagonjwa wa matende?

SABABU ZA KUKUBALIANA KUZUIA UGONJWA WA MATENDE NA MABUSHA

5 Je ni sababu zipi zinazo kufanya ukubaliane au ukatae mpango wa utoaji dawa za matende na mabusha kwa jamii

Dodosa:

5.1 **Je**, ni sababu zipi zinapelekea ukubali mpango wa utoaji dawa za matende na mabusha?

5.2 **Je**, ni sababu zipi zinakufanya ukatae umezaji wa dawa zitolewazo kwenye mpango wa utoaji dawa za matende na mabusha?

6 Je ni sababu zipi zinazo kufanya ukubaliane au ukatae mpango kudhibiti Mbu?

Dodosa:

6.1 **Je**,ni sababu zipi zinazo kufanya ukubaliane (1) kulala kwenye chandaru chenye dawa, (2) usafishaji wa mazingira **kuzuiamazalia** ya mbu na (3) upulizaji wa dawa majumbani?

6.2 **Je**,ni sababu zipi zinazo kufanya usikubaliane (1) kulala kwenye chandaru chenye dawa, (2) usafishaji wa mazingira kuzuia mazalia ya Mbu na (3) upulizaji wa dawa majumbani?

7 **Je**,ni sababu zipi zinazo kufanya ukubaliane kushiriki au ukatae kwenye upasuaji wa mabusha na matende?

Dodosa:

7.1 **Je** ni sababu gani zimekufanya **ukubali** kushiriki kwenye shughuli za upasuaji wa mabusha na/au usafi wa miguu kwa wagonjwa wa matende?

7.2 **Je** ni sababu gani zimekufanya ukubali kushiriki kwenye shughuli za upasuaji wa mabusha na/au usafi wa miguu kwa wagonjwa wa matende?

Kufunga

Asante kwa muda wako.

Appendix XIII: Approval of Ethical Clearance

**MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR OF POSTGRADUATE STUDIES**

P.O. Box 65001
DAR ES SALAAM
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Telefax: +255-22-2150465
E-mail: dps@muhas.ac.tz

Ref. No. DA.287/298/01A/

15th April, 2019

Mr. Franco Ngonya
MSc. Parasitology and Medical Entomology
MUHAS

**RE: APPROVAL OF ETHICAL CLEARANCE FOR A STUDY TITLED:
"COMMUNITY COMPLIANCE TO INTERVENTIONS FOR THE
ELIMINATION AND MORBIDITY MANAGEMENT OF LYMPHATIC
FILARIASIS IN KIBAHA DISTRICT, TANZANIA"**

Reference is made to the above heading.

I am pleased to inform you that, the Chairman has, on behalf of the Senate, approved ethical clearance for the above-mentioned study. Hence you may proceed with the planned study.

The ethical clearance is valid for one year only, from **15th April, 2019 to 14th April, 2020**. In case you do not complete data analysis and dissertation report writing by **14th April, 2020**, you will have to apply for renewal of ethical clearance prior to the expiry date.

Dr. Bruno Sunguya
ACTING: DIRECTOR OF POSTGRADUATE STUDIES

cc: Director of Research and Publications
cc: Dean, School of Public Health and Social Sciences, MUHAS

Appendix XIV: Introduction Letter from Kibaha District

OFISI YA RAIS

TAWALA ZA MIKOA NA SERIKALI ZA MITAA

HALMASHAURI YA WILAYA KIBAHA

Tel.No. 023-2402240
 Fax No.023-2402240
 E-mail:ded.kibaha@pwani.go.tz
 Tovuti: www.kibahadc.go.tz



S.L.P. 30153,
KIBAHA.

Kumb. Na. KDC/C.60/2/VOL.III/51 24/04/2019

Mtendaji Kata,
 Kata ya Soga, Janga, Kwala,
 Gwata na Kilangalanga,
KIBAHA.

**YAH: KUMTAMBULISHA NDG FRANCO NGONYA KUJA KUFANYA
 UTAFITI**

Husika na mada tajwa hapo juu.

Ofisi inakiri kupokea barua ya Ndg. **Franco Ngonya** kutoka Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili ya Tarehe 16/04/2019 yenye Kumb. Na. HD/MUH/T.381/2017 ya maombi ya kufanya utafiti (Research) **kuhusu Ushiriki wa jamii katika kuzingatia utokomezaji/uthibiti wa Matende na Mabusha**. Utafiti huo anatakiwa kuanza tarehe 06/05/2019 hadi 04/06/2019.

Kwa barua hii unaombwa kutoa ushirikiano.

Nakutakia kazi njema.


Dr. Ibrahim Isack,
Kny. Mkurugenzi Mtendaji
Halmashauri ya Wilaya
KIBAHA

MKURUGENZI MTENDAJI
KIBAHA

Nakala: Mkurugenzi Mtendaji H/Wilaya – Aione kwenye jalada
 : Ndg. Franco Ngonya