FACTORS ASSOCIATED WITH NON-COMPLIANCE TO ANTI-LYMPHATIC FILARIASIS MASS DRUG ADMINISTRATION PROGRAMME IN MKURANGA DISTRICT - TANZANIA

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CERTIFICATION

The undersigned certifies that he has read and hereby recommends for acceptance by the University of Dar es salaam a dissertation entitled :-
Factors associated with non compliance to anti Lymphatic filariasis mass drug administration programme in Mkuranga District – Tanzania" in partial fulfilment of the requirement for the degree of Masters of Public Health.

Prof. J.N. Minjas (SUPERVISOR).....

Date.....15 - 10 - 04.....



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DEDICATION

This dissertation is dedicated to my wife Tausi and my son Maleta

ABSTRACT

This descriptive cross sectional study was carried out in Mkuranga District, Coast Region during the period of June 2004.

The main objective of this study was to determine factors associated with non-compliance to anti-Lymphatic filariasis drugs, which are given en-mass annually in a single dose. A structured questionnaire was administered to 251 study participants in the District. In-depth interviews were conducted with 30 participants of whom 22 were village LF committee members, 3 community members with late manifestation of the disease (elephantiasis of the lower limbs), 2 women in the community and 3 youth from the general population.

It was found that 79%(200/251) of the respondents were aware of the existence of Lymphatic filariasis disease in their area. Only 23%(46/200) of respondents knew that the disease is transmitted by mosquitoes. There was however, inadequate awareness of LF elimination programme's existence with only 29%(74/251) of the respondents being aware of the programme.

The study found that the drugs given were generally safe, minor side effects were experienced by only 7.5%(12/161) of the respondents, which included slight nausea prompting no need for medical attention. Fear of drug side effects was found to account for only 5.2%(13/251) of respondent's reasons for non compliance. Drug compliance was found to be 64%(161/251) in Mkuranga District. The study identified factors such as mistrust of drug distributors, absenteeism and inadequate health education as the main contributors to the observed non-compliance.

In conclusion the study shows that proper health education on LF disease, causes, signs and symptoms, and prevention is vital and needs to be strengthened. The study recommends the programme to put more efforts at ensuring health education is properly conducted using all the available means and active population involvement in selection of drug distributors.

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LIST OF ABBREVIATIONS/ACRONYMS

DALY`s .....Disability Adjusted Life Years

DEC ..... Diethylcarbamazine

DHMT ..... District Health Management Team

GAELF .....Global Alliance on the Elimination of Lymphatic Filariasis

IEC .....Information, Education and Communication

MDA ..... Mass Drug Administration

LF.....Lymphatic Filariasis

MOH.....Ministry of Health

PHC.....Primary Health Care

NLFEP.....National Lymphatic Filariasis Elimination Programme

WHA ..... World Health Assembly

HF ..... Health Facility

CHAPTER 1: INTRODUCTION AND REVIEW OF LITERATURE

1.1 Introduction and Magnitude of the problem

Lymphatic filariasis is one of the major socio-economic and public health problems. It contributes to poverty, disability and social stigmatisation (WHO, 1998). Worldwide, an estimated one billion people are at high risk of contracting the infection in 80 countries and 120 million people are infected with *Wuchereria bancrofti* a causative agent for Lymphatic filariasis disease.

The disease's characteristic of manifesting slowly within the affected individual and its relatively low mortality rates greatly contributes to the low attention given to it by the decision makers on its control. It is estimated that about 5,549,000 Daly's are lost, the highest of all tropical diseases after malaria (Weerasinghe et al, 2002). Sub-saharan Africa has an estimated 28 million people already infected and the continent bears 40% of global burden of disease. (Michael et al 1996).

Around 18 million people are at risk of infection and already 2 million are living with manifestation of the disease in Tanzania. Endemicity of the disease is favoured by a typical climate found in most part of the country (sub-humid with average rainfall) conducive for mosquito breeding responsible for the transmission of the disease causative agent *Wuchereria bancrofti*. (NLFEP, 2001.Mwele, 2003).

Some community based surveys conducted in the islands of Unguja and Pemba in 1975 showed prevalence rates ranging between 7% to 39%, similar surveys repeated in the area in 1987 to 1991 showed prevalence rates ranging between 0,3% to 49%. A prevalence rate of 54% was reported in Mafia island (NLFEP, 2001). Another study in Northern coast of Tanzania found prevalence rates of 22.2% to 37.6% (Simonsen et al, 1995).

As is observed in the studied areas Lymphatic filariasis is complex, showing infection rates varying greatly even within a single village (WHO, 1999).

1.2 Literature review

The programmes to control human filarial infections have been based on chemotherapeutic interventions regarded primarily as methods of transmission control and symptom alleviation. Different strategies of chemotherapy have been applied from selective treatment of microfilaraemics with DEC for filariasis, to DEC-fortified salt in China for whole populations (Liu et al, 1992).

The global LF programme now relies on annual, time-limited treatment involving mass drug administration campaign (at least for five years) of DEC and albendazole or, in co-endemic areas of filariasis and onchocerciasis (Africa and Yemen), ivermectin and albendazole. Albendazole is not only a drug against LF but it has also a good, proven effect on many other helminthic infections. Many areas endemic with LF are also endemic with intestinal helminths, which are the ones albendazole is very effective against (Molyneux et al, 2003). By treating people in LF-endemic areas with albendazole an ancillary effect would be that the people also would be cleared of other parasitic infections. It has been stated that this is very important for the compliance of the populations since LF infections are not recognised by many of the infected (Pinkowisky, 2001). DEC cannot be used for onchocerciasis patients because of severe adverse reactions (Makunde et al, 2003).

These programmes represent model disease control partnerships (Onchocerciasis and LF control programmes). They rely on safe, efficacious, largely donated drugs, which not only arrest transmission, but also provide a multiplicity of health benefits, as well as reducing disease specific morbidity (Molyneux et al, 2003).

These programmes represent demonstrably cost-effective health interventions both to the individual and to the community, in addition to increasing the social and economic status of the poorest in rural and urban settings.

The efficacy of single dose DEC or Ivermectin with Albendazole in reducing microfilaria prevalence and intensity is well proven but the success of such elimination programmes is also dependent on factors such as drug distribution and its collection and the magnitude of non-compliance by recipients(WHO, 2000).

In a study done by (Weerasinghe et al, 2002) in Colombo, Sri Lanka on compliance to DEC during mass treatment found (93.6%) of the study participants were aware of the Lymphatic filariasis control programme, but most of them were unaware of the rationale for complying with anti-Lymphatic filariasis drug treatment. Drug distributing centres, and health clinics where routine polio immunizations were carried the best drug collection rates were recorded. The study also showed that if anti-filarial drugs are left to be swallowed away from the point of drug distribution then a significant number of drug acceptors are unlikely to swallow them at home i.e DEC tablets were collected by (49.7%)413 individuals, and only (37.5%)312 had swallowed the drug.

Drug collection rates were higher among females, while more than 90% of those who swallowed the drugs were children and females. Reasons for non-compliance among those who accepted drugs were; fear for the drug side effects, did not perceive its benefit, suspicion/mistaken belief (expired drug, drug could cause impotence or infertility).

It is therefore important to note that the health education given should highlight the long-term benefits of treatment, specific information about side effects and any probable drug interactions especially with commonly used medications, this could result in better acceptance of the drug and compliance with treatment.

Similar findings are shared by (Babu et al, 2003) in a LF programme evaluation survey Godavari, India who found 77% of the population received anti LF drug but only 64%

complied with treatment. Reasons for non-reception and non-compliance were broadly explained as those related to health services like poor motivation of health personnel, inadequate training of the health personnel, inefficient health workers interaction with the community and weak information education and communication. Those related to the community like poor community involvement/participation, inadequate community awareness of drug treatment and disease, inability of the peripheral health workers in explaining the importance of clearing microfilariae in order to reduce the transmission potential and also inability at managing drug side effects and morbidity at the community level. Drug related factors include fear for the side effect, shortage of drugs, and lack of perceived benefit of treatment. Other studies support the findings (Ramaiah et al,2000,. Oyibo et al,2000,. Yahathugoda et al, 2003,. Awisi et al, 1991.,Kasturiratne et al, 2001, Babu et al, 2004).

In similar mass drug administration in Onchocerciasis control program which use Ivermectin ,a strategy using health promotion through health clubs in community schools was found to be effective in increasing adult knowledge about the disease and its treatment, thus improved drug coverage and reduced non-compliance. Therefore school children could supplement information ,education and communication (IEC) aspect of health care delivery in a community (Shu et al, 2000).

1.3 Control approaches

Three main options are employed in the control of LF. The available options are vector control, mass chemotherapy and morbidity control.

(i)Vector control

Vector control plays an important role in the control of LF. Earlier studies in Zanzibar used polysterine beads in wet pit latrines, other strategy was the use of residual spraying (Gyapong et al, 2000). In recent years improved technique for vector control include the

use of impregnated treated bednets and curtains with synthetic pyrethroids. Environmental sanitation is also effective at reducing vector's breeding places. All these methods of reducing human vector contact provide useful supplements to effects of treating the human population to reduce transmission.

(ii) Chemotherapy

.Treatment

The drug which has been in use for many years to treat lymphatic filariasis is diethylcarbamazine (DEC). The use of DEC is more confined in non Onchocerciasis and Loaisis endemic areas as the drug causes severe adverse reaction to individuals with multiple infections (*Wuchereria bancrofti* worms and Onchocerciasis) (Makunde et al, 2003).

The drug is taken in tablet form. DEC kills the microfilariae quickly and injures or kills the adult worms slowly, a single annual dose of 6 mg/kg is able to decrease microfilariae by 90% and adult worm by 50%. These drugs are not recommended during pregnancy (Gyapong et al, 2003) though the risk is relatively low. During mass treatment campaigns children under fives and sick individual are also exempted to swallow the drugs.

In some parts of the world DEC was used in a form of medicated salt (Gelband,1994., Meyrowitsch et al, 1996). If all the adult worms are not killed, remaining paired males and females may continue to produce more larvae. Therefore, several courses of DEC treatment over a long time period may be necessary to rid the individual of the parasites.

The DEC side effects experienced are due to the body's natural allergic reactions to the dying parasites rather than to the DEC itself. For this reason, DEC must be given carefully to reduce the danger to the individual. Side effects may include fever, chills, **headache**, **dizziness**, **nausea and vomiting**, **itching**, and joint pain. These side effects

usually occur within the first few days of treatment. These side effects usually subside as the individual continues taking the drug.

.Mass chemotherapy

Recent development in LF research, advocate mass drug administration programs with combined doses of Ivermectin or DEC and Albendazole. A single dose of Ivermectin at a dosage level of 400 ug/kg irreversibly reduces micro filarial production by 65% (Plaisier et al, 2000). A study on by (Beach et al, 1999) combined Albendazole and Ivermectin for the treatment of intestinal helminth and *W.bancrofti* in school children revealed that a reduction of *Trichuris* prevalence and micro filarial prevalence was more than if Ivermectin was used alone. Mild side effects of Ivermectin include headache, fever, and myalgia.

. Prevention

Inhabitants of endemic areas should be educated on the mode of transmission and methods of mosquito control.

(iii) Morbidity control

This aims at reducing the suffering of the already diseased persons, which will enable them to resume their social roles. It also helps to halt the progression of the condition to worse. A study by (Dreyer, 1999) noted that maintaining basic hygiene practice such as regular washing of elephantoid limbs with soap and water reduces the incidence of attacks and progression of elephantiasis. Surgical intervention (hydrocelectomy) is also an important component of morbidity control.

Recent research advances done by the WHO, identified LF, as one of the eliminable diseases and thus a new chapter was opened to formulate strategies aimed at eliminating the disease. This led the World Health Assembly (WHA)-1997 to pass a resolution 50.29

calling for member states to formulate and strengthen activities toward eliminating lymphatic filariasis as a public health problem by the year 2020 (WHO, 1998).

1.4 National Lymphatic Filariasis Elimination Programme

In October 2000, Tanzania launched its national programme (National lymphatic filariasis elimination program – NLFEP). Underscoring the country's commitment to the WHA (1997) resolution 50:29 (NLFEP, 2000). Main goals of the programme is to reduce transmission of infection and, ultimately eliminate the disease through annual mass administration of single dose Ivermectin and Albendazole drugs to the eligible population in a period of 5-6 years, and to intergrate the programme activities with other existing programs (onchocerciasis control program, malaria control program).

The strategy is to interrupt transmission of infection by ensuring the eligible population swallow the anti filarial drugs, the population use impregnated treated bed nets, and to encourage the population to improve household environment which will discourage mosquito breeding.

The programme has the duty of developing its national strategic plan; carrying out initial assessment and mapping of LF distribution in the country; collecting baseline microfilaraemia and disease prevalence data; publicize programme launch; build link with private sector; provide a coordinating arm with ministries WHO regional office, national academic and research institutions; mobilize and allocate resources to regions on an epidemiological basis; organizing of cross checking for achievement of elimination; coordination with mass media organizations; facilitate Regions and Districts to prepare action plans; prepare training materials and start training; planning social mobilization; initiate disability management and implement mass chemotherapy of Albendazole and Ivermectin.

The programme has a focal person at the Region and District level, Their duty is to assist the Region or District LF committees in monitoring drug coverage across Regions/Districts and transmit data to the national level and also further translate into action the NLFEP strategic plan. The programme integrates its activities into the existing local government governing structures and PHC committee at all levels (National, Regional, District, Ward, Village and hamlet level). MDA exercise is conducted in a campaign lasting for 3-4 days (NLFEP, 2001).

The NLFEP ensures the necessary resources (finance, drugs and consumables, posters and leaflets, training guides and manuals, T-shirts) for the campaign are available in time and distributed to the respective areas. Health promotion, education and mobilization through Radio, Television, Newspaper, IEC material preparation is also done at the national level by the programme. Since its inception in 2000, the programme is providing MDA of Ivermectin and Albendazole tablets to all Districts in four Regions of Mtwara, Lindi, Coast, and Tanga.

Available data in year 2002 involving all Districts of Coast and Mtwara Regions, shows a cumulative total of 2 million people have received treatment. The programme has already started implementing MDA in Tanga and Lindi Regions since 2003, and the region of Dar es salaam will be included in the year 2004 (NLFEP, 2003).

Regional LFEP committee under the regional secretariat supervise the districts preparation to administer anti filarial drugs and also consolidate effort from other stakeholders in disseminating health education, and material support to the districts.

1.5 Mkuranga LF control programme

Mkuranga District launched its programme in the year 2001, its activities are coordinated by the District LF focal person from health department, the District commissioner heads the district LFEP committee; District Health Management Team (DHMT) provides the technical arm of the District LF committee. The committee ensures all the communities

have conducted census and the target population is known, number of drug administration posts, number of drug distributors, training costs, allowances are known and available, also ensures the necessary resources are ready for the exercise (finance, drugs and consumables, posters and leaflets, bicycle, motorbikes, vehicles, stationery) (NLFEP, 2001).

The district LF committee has divided its functions into two groups; one group concentrates on social mobilization. The team consists of politicians, influential people and religious leaders. The other is the technical team composed of the district health management team. Orientation seminars to village and ward LF committees are done by the DHMT and training of the drug distributors and some selected health service providers. Drug distribution and other supplies is done through the existing essential drug supply system up to the health facilities and from there further distributed to the respective villages. (NLFEP; 2001, 2002, 2003).

Wards and village LF committees work together in identifying location of drug distribution posts according to population density, geographical location, accessibility, and other convenient reason agreed, they make sure that the necessary drugs and supplies are in place and select distributors. Intensive health education and promotion against LF conducted through public meetings, video shows, and use of oriented local entertaining groups.

Implementation of MDA is a multisectoral exercise and voluntary, the day involves different actors in ensuring the population are coming forward to receive and swallow the anti-filarial drugs. Community leaders ensure the distributors have adequate drug and safe water for the exercise. House to house mobilization is sometime used to encourage people to come forward to receive the anti filarial drugs. Therefore, to achieve a high level coverage depends on the extent of health education, social mobilization, logistic support in place (number of drug distributors, delivery posts, availability of

drugs) which essentially depends on the level of commitment among stakeholders in ensuring each member`s responsibility is done.

In the year 2003, the District had a series of activities within a week which involved training, mass mobilization and mass administration of anti filarial drugs; Activities during the week were training of 15 District TOT's, orientation seminar to 20 Ward development committee members and 35 members of the District PHC committee on LF cause, symptoms and signs, drug side effects, its control and the importance of taking anti filarial drugs. Similar training was conducted to drug distributors (village health workers) 2 from each of the 104 villages in the District, 104 health workers were also trained. Social mobilization was done to representatives of the village governments (each village was represented with 4 members). Participants were Village chairperson, Village executive officer, Traditional healer and Traditional birth attendant. Participants were briefed on the LF disease, cause, signs and symptoms, drugs side effect, its prevention and control. Drugs were distributed using the existing essential drug supply system in the District. Evaluation meeting was done to see the progress of the exercise, decision was made to increase number of days of administering drugs from 4 days to 14 days following a poor compliance reports from different part of the district, the district achieved a coverage rate of 53.3% in the year 2003. Core issues were cited during the time; these were poor health education on the disease which could not be addressed within such a short time, there was no enough time for social mobilization, misconception on the outcome of swallowing anti filarial drugs and lack of community ownership sense of the programme, interaction with other campaign within the District.

1.6 STATEMENT OF THE PROBLEM

Data from NLFEP show most Districts of the Coast Region are generally having low coverage since the programme was launched in 2000. Overall coverage for the region in 2000(74%- only Mafia District was involved), 2001(53.3%, 2002(54.5%), 2003(71.5%).

. Since the programme was first implemented in the district. Data from NLFEP shows anti filarial MDA coverage for Mkuranga District in 2001 (64.4%), 2002 (50%), 2003,(53%) (NLFEP; 2001, 2002, 2003).

Although the District has relatively maintained medium coverage in all years it has been administering anti filarial drugs since 2001, this coverage is unlikely to make the programme achieve its intended goal. To achieve an interruption of disease transmission, coverage should be 80% and above (BV Babu et al, 2003). There is therefore a need to understand the causes of non-compliance to the MDA programme in Mkuranga District. Low coverage at 53% in the District means many years will be needed to achieve a significant interruption of disease transmission and elimination of the disease would therefore be costly.

The study findings will inform the district LF committee and the NLFEP on how to improve coverage in Mkuranga District.

1.7 RATIONALE OF THE STUDY

The MOH through its NLFEP has for the past 4 years been facilitating and coordinating mass treatment with Ivermectin and Albendazole.The effectiveness of the programme require drug coverage of about 80% of the population in order to achieve an interruption of disease transmission. Treatment coverage of 53% in Mkuranga District means persistent residual transmission and longer period of annual treatment to ensure complete interruption of transmission.

Drug regimen used for treating LF in the programme also effectively treats many intestinal and ecto-parasite infections as well as other filarial parasites, a great deal of social, developmental and economic benefit will derive from these ancillary benefits of the NLFEP.

1.8.0 OBJECTIVES

1.8.1 General objective

To identify factors associated with non-compliance to the anti-Lymphatic filariasis mass drug administration programme in Mkuranga District.

1.8.2 Specific objectives

1.8.2.1 To determine the level of knowledge on the cause, signs and symptoms of LF disease.

1.8.2.2 To determine people's awareness of the existence of NLFEP.

1.8.2.3 To determine the proportion of respondents who experienced drug side effects.

1.8.2.4 To determine whether non-compliance is influenced by level of education.

CHAPTER 2: METHODOLOGY

2.1 Study area

This study was conducted in Mkuranga district, Coast region. Five villages: Bupu, Mwandege, Kimanzichana kusini, Kimanzichana kaskazini and Vikindu were selected for the study. The fifteen wards in the District were grouped into three according to treatment coverage achieved in the last campaign, 2003. First group represented wards with treatment coverage ranging from 80% and above, second with treament coverage ranging between 50% to 79% and the third group represented those with treament coverage less than 50%. Three wards of Bupu for high performing, Vikindu for medium performing, and Kimanzichana for the poor performed were randomly selected to represent each group. From each of these wards the villages were randomly selected.

2.2 District Profile

Mkuranga district is one of the six districts which form the Coast Region, the district is situated between 6° 35′ and 7° 30′ south of equator, and between 38° 35′ and 39° 31′ east of Greenwich meridian. The district borders to the south with Rufiji district, Kisarawe district to the west, Temeke district to the north, and the Indian ocean to the east. The district headquater is at Mkuranga. The town is a semi urban settlement situated along the southern regions highway 50 Km from city of Dar es salaam. It has a total area of 2,432 square Km, where 1985 square Km of land is suitable for agriculture and 51 square Km is a forest reserve area.

The district has two geographical pattern ; the coast plain and lowland area. Two rain seasons are experienced with average rainfall around 760 – 1010 mm/annum: the short rain (November – December) and the long rain (March to June). The district is generally hot with average temperature around 28°C.

Administratively, the district is divided into 4 divisions. There are 15 wards and 101 villages and 42,937 households in the district. According to 2002 census the district has

a population of 186,927 of which 91,411 are males and 95,516 are females, and the average family size is 4.4.

Agriculture is the main activity in the district, production is both for cash i.e cashew nuts, coconut. Food crops include maize, rice, cassava, millet. Small scale fishing and charcoal making is practiced in the district.

2.3 The district Health services system

The district has 33 health facilities. There are 2 hospitals, one a public hospital, and the other is owned by a non-for profit organisation. There are 2 health centres both public owned, and 29 dispensaries. 3 dispensaries are run by non for profit faith organisations, 14 are private owned and 12 public owned.

Informal health sector (Traditional healing practices) is also widely practiced in the district, no data was available to know the magnitude and coverage offered by this sector.

2.4 Major health problems in the district

The 10 top most diseases of public health importance are; malaria, ARI, eye diseases, diarrhoea diseases, worm infestations, injuries, skin diseases, pneumonia, HIV/AIDs and Sexually transmitted infections.

2.5 Study design

A cross section study was conducted in Mkuranga district during the first 3 weeks of June. Both quantitative and qualitative methods were used. Structured and in depth interviews were used for data collection. Respondents for both methods were drawn from the same communities. Respondents to structured interviews were excluded from in depth interviews.

2.6 Study population

The target population comprised of all individuals above 5 years, who are eligible for mass drugs administration. Excluded individuals during implementation of the programme on various accounts i.e acute febrile illnesses, pregnancy, etc were not excluded during the study.

2.7 Sample size calculation

Sample size estimation was calculated by estimation of proportions as described by (Armitage and Berry, 1997).

$$N = Z^2P(1 - P) / E^2$$

Z = 1.96

E = Maximum likely error between proportions set at 8%

N = The desired sample size

P = Estimated proportion of the population complied with treatment against LF

53%, according to MDA coverage (Mkuranga MDA coverage, 2003)

N = 1.96 x 1.96 x 53 (100 – 53) / 64 = 149

1.5 factor is a design effect when using multistage cluster sampling method

The design effect 1.5 x calculated sample N = Minimum required sample

1.5 x 149 = 224

Inclusion of 5% of the sample size = 0.05 x 224 = 12

The minimum sample size = 224 + 12 = 236 approximated to 250.

2.8 Study procedure

Multistage cluster sampling technique was used to get a representative sample. A list of wards and villages in the district was requested from the district council planning office.

Stage one – random selection of wards was done, wards were grouped into 3 groups on criteria of MDA performance (MDA coverage) that is high coverage, medium and low coverage). One ward was chosen randomly to represent each group. Bupu ward

represented a high coverage group, Vikindu for medium coverage and Kimanzichana representing low coverage.

Stage two – from the identified wards a random selection of villages was done, at least one village was chosen to represent each ward. From Bupu ward Bupu village was selected, Vikindu ward Mwandege and Vikindu villages were selected, Kimanzichana ward Kimanzichana north and Kimanzichana south villages were chosen.

Stage three – From a village list of hamlets, random selection of hamlet done. Kimanzichana south - Matope, Lisimalike, Kitoho hamlets were selected; Kimanzichana North - Kwa gongo, Kilungule, Mandikongo hamlets were selected; Mwandege – Mwandege, mbezi, Mzambarauni hamlets were chosen; Vikindu – Vikindu, Picha ya ndege hamlets were selected; Bupu – Bupu, Kilongoni and Katalukumbi were selected.

Within the hamlet households were randomly visited and from each household four individuals any with above 6 years old were interviewed until the required sample was obtained.

Purposive sampling method was used to get participants for the in-depth interview.30 members from the village LF committees (youth, women, elders and influential members of the community) were interviewed from the same communities where structured interviews were conducted.

2.9 Pre testing

The interview tools were tested in Kiromo village, Bagamoyo district, May 2004. The District was chosen as is similarly implementing MDA of anti filarial drugs and the village is constantly poorly performing. The gained experience was used to make correction for the actual field study.

2.10 Selection and training of research assistants

The study involved 4 research assistants, 3 of them were clinical officers and 1 agricultural officer. They were explained the purpose of the study, and principal researcher's expectation from them on ethical issues (confidentiality, respect and

respondents right to participate or not). Training was conducted for one day at Mkuranga Medical Officers meeting room.

2.11.0 Methods of data collection

2.11.1 Structured interview

Interview schedule was used to collect information, individuals aged 7 years and above were interviewed. The questionnaire consisted of 42 close ended questions, major focus was on socio – demographic; knowledge on cause, signs and symptoms of LF disease; Side effects of Ivermectin and Albendazole drugs in relation to compliance; people's awareness on existence of the programme to eliminate LF disease. Each interview schedule was conducted in about 40 – 50 minutes. Knowledge on LF was finally measured by considering number of questions as outlined in Appendix E(pg 65).

2.11.2 In depth interviews

Interview was carried out among members of the LF committee from 5 selected villages. A total 30 participants were interviewed, 6 from each village. There was 22 participants from the village LF committee, 3 people living with manifestation of the disease (elephantiasis), 2 women, 2 youths both male from the general population. The script was translated from Swahili to English. The information content was analysed based on the theme of the interview. Some of the actual quotes were taken in strengthening the content analysis.

2.11.3 Data process, analysis and presentation

All the filled questionnaire were coded and double checked by the principal researcher. A template was created in the Epi Info programme version 6 for entering coded data.

Analysis was done by the computer Epi6 programme. Descriptive statistical analysis was done and presented in frequency distribution tables and cross tabulation. Chi-square tests were employed to test for association between the selected variables. P value of 0.05 or less was considered to be significant.

2.11.4 Ethical consideration

The study proposal was approved by the Muhimbili University College of Health Sciences Ethical Committee. Permission to conduct this study in Mkuranga district was granted by the district council authority. Each participant in the study from research assistants, and respondents both for structured interview and in depth interview were explained the purpose of the study. They were informed of the voluntary participation and only those who provided verbal consent were recruited in the study. Confidentiality and anonymity were assured.

2.11.5 Limitation of the study

Verbal threats from community leaders to take legal action against non-compliant individuals did have some positive recall bias on use of anti LF drugs for fear of reprisal.

2.11.6 Definition of terms

Non compliance – not acting in accordance, refusing.

Template – Important step in the process of coding, variable formulation and data entry in Epi6 computer programme.

Awareness – having knowledge or realization of an issue, concept, object etc. In this study awareness to the programme to eliminate LF existence and its functions.

Knowledge – range of information, familiarity. A true response on the cause, signs symptoms, prevention and control of LF disease.

Not trust drugs distributors – people's suspicion toward drug distributors that have hidden agenda together with researchers simply because they wanted allowances given by the programme.

CHAPTER 3: RESULTS

3.1 Socio-demographic characteristics of study sample by age and sex

A total of 251 respondents aged 7 years and above were interviewed of whom 57.0%(143/251) were males and 43.0%(108/251) females. Most of the respondents were aged between 7 years and 49 years and majority of respondents were married 58.2%(146/251). 33.1%(83/251) of the respondents did not attend any formal school, the remaining respondents had at least primary school education level. Males were relatively more literate than females, and the main occupation of respondents was agriculture. Other occupations include petty businesses, civil service, unemployed, housewives and students.

Table (1) : Socio-demographic characteristics of the study sample by age and sex

	Sex		
Age (years)	**Male**	**Female**	**Total**
7-19	35(59.3%)	24(40.7%)	59(23.5%)
20-29	27(45.8%)	32(54.2%)	59(23.5%)
30-39	30(57.7%)	22(42.3%)	52(20.7%)
40-49	20(80.0%)	5(20.0%)	25(10.0%)
50-59	13(65.0%)	7(35.0%)	20(8.0%)
60-69	8(50.0%)	8(50.0%)	16(6.4%)
70+	10(50.0%)	10(50.0%)	20(8.0%)
Total	**57.0%(143)**	**43.0%(108)**	**251(100.0%)**

Table (2) : Sex distribution of major socio-demographic characteristics

Socio status	Male(143)	Female(108)	Total
Marital status			
Married	83(56.8%)	63(43.2%)	146(58.2%)
Single	51(62.2%)	31(37.8%)	82(32.7%)
Widow	0(0.0%)	8(100.0%)	8(3.2%)
Separated	9(60.0%)	6(40.0%)	15(6.0%)
Total	**57.0%(143)**	**43.0%(108)**	**251(100.0%)**
Level of education			
Not attended school	37(44.6%)	46(55.4%)	83(33.1%)
Primary education	93(60.4%)	56(39.6%)	149(59.4%)
Secondary education	4(80.0%)	1(20.0%)	5(2.0%)
College and above	2(66.7%)	1(33.3%)	3(1.2%)
Adult education	7(63.6%)	4(36.4%)	11(4.4%)
Total	**57.0%(143)**	**43.0%(108)**	**251(100.0%)**
Occupation			
Permanent employee	1(25.0%)	3(75.0%)	4(1.6%)
Bussiness	22(59.5%)	15(40.5%)	37(14.7%)
Farmer	91(59.9%)	61(40.1%)	152(60.6%)
Unemployed	2(100.0%)	0(0.0%)	2(0.8%)
Housewives	0(0.0%)	15(100.0%)	15(6.0%)
Sub total	**116**	**94**	**210**
Others: Students	22(61.1%)	14(38.9%)	36(14.3%)
Other occupation	4(100.0%)	0(0.0%)	5(1.6%)
(watchman, seaman, stock keeper, Traditional healer)			
Sub total	**27**	**14**	**41**
Total	**57.0%(143)**	**43.0%(108)**	**251(100.0%)**



3.2 Knowledge of the disease

3.2.1 Knowledge on the cause, symptoms and signs of LF disease

Respondents were asked whether they knew LF filariasis, its symptoms, the likely cause (or mode of transmission) of the disease and how they could avoid it.

The study found out that 79.7%(200/251) of the respondents knew the disease. 74.8%(107/143) of the male respondents were more familiar with the disease than their female counterparts 68.5%(74/108). The finding however was not statistically significant. Most respondents identified elephantiasis of the lower extremity as the sign of LF disease 165/200(82.5%(165/200) although the difference was statistically significant, hydrocele was only mentioned by 4.0%(8/200) of the respondents had heard of the disease, other early signs of the disease were unknown.

18.3%(46/251) of the respondents associated the cause to mosquito bites and 4.4%(11/251) associated it with God's wish . More than half of all respondents who knew the disease did not know its cause.

Table (3) Recognition of LF disease – Familiarity .

Know the disease?	Freq	percent
Yes	200	79,7%
No	51	20.3%
Total	251	100.0%

Table (4) Distribution of LF disease recognition by sex

Distribution of the disease – Familiarity by sex (N=251)

	Know the disease?	
Sex	**Yes**	**No**
Male	116(46.2%)	27(10.8%)
Female	84(33.5%)	24(9.5%)
Total	200(79.7%)	51(20.3%)

3.2.2 Level of knowledge on LF symptoms and signs

The knowledge of LF disease was further categorised into 3 levels depending on the respondents answers on presence of the disease causes, signs, prevention and control measures. A specifically designed checklist was used to assess the respondent's level of knowledge. The checklist included ; knowing the disease, its signs (i.e. fever, chills ,elephantiasis, hydrocele), mosquito control measures – (ITNs, improvement of the household environment) and taking anti filarial drugs. The tool also considered some of the other beliefs (i.e. bewitched, drinking coconut juice, promiscuity etc). The 3 levels of knowledge were categorised as level one – low level, level two – moderate level and level three – high knowledge level (page 67).

Generally, the study has found out that the knowledge of the disease, causes/symptoms, prevention and control methods to be high. Proportion of respondents with high knowledge was 61.0%(152/251) and those with medium knowledge was 34.7%(87/251).

The findings was statistically significant for the observed difference in knowledge between males and females.

Table (5) : Level of knowledge on cause, symptoms/signs of LF by sex

Level of knowledge	Sex		
	Male	Female	Total
Low	7(58.3%)	5(41.7%)	12(4.8%)
Medium	61(70.1%)	26(29.9%)	87(34.7%)
High	75(49.3%)	77(50.7%)	152(61.0%)
Total	143(57.0%)	108(43.0%)	251(100.0%)

Chi square = 9.75
Degrees of freedom = 2
p value = 0.00763817

3.2.3 :Level of knowledge on cause, signs/symptoms by age

From the study it appears that, there is no significant observed difference in knowledge change with increasing age .

However, respondents younger than 40 years showed a relatively higher proportion of knowledge in both moderate and high knowledge levels although the differences were not statistically significant.

Table (6): Level of knowledge by age

Level of knowledge: Low = score of less than 14 in the general knowledge of the disease checklist (pg 68)

Medium or Moderate = score range of 15-19 in the knowledge checklist

High knowledge = Those with score >20 in the knowledge checklist.

Knowledge level	Age groups (years)							
low	<19	20-29	30-39	40-49	50-59	60-69	70+	Total
Medium	3 (25%)	2 (16.7%)	4 (33.3%)	1 (8.3%)	1 (8.3%)	1 (8.3%)	0 (0.0%)	12 (4.8%)
High	20 (23%)	23 (26.4%)	22 (25.3%)	9 (10.3%)	5 (5.7%)	5 (5.7%)	3 (3.4%)	87 (34.7%)
Total	36 (24%)	34 (22.4%)	26 (17.1%)	15 (9.9%)	14 (9.2%)	10 (6.6%)	17 (11%)	152 61%)
	59 (24%)	59 (23.5%)	52 (20.7%)	25 (10.0%)	20 (8.0%)	16 (6.4%)	20 (8.0%)	251

Chi square = 9.60 Degrees of freedom = 12
p value = 0.65128309

3.2.4 Level of knowledge by education level

The study found out that most respondents with high knowledge on LF disease were actually having low level of formal education. 41.4%(63/152) of respondents who had not attended any formal school, and 50.7%(77/152) respondents with primary school education had a high knowledge of the disease. The findings were statistically significant.

Table (7): Level of knowledge by educational level

Level of education: 1- represents those who have never attended school

2- those who attained up to primary school level

3-secondary education level, 4-college and above, 5-adult education

	Level of education					
Knowledge Levels	1	2	3	4	5	Total
Low	6 (50.0)	6 (50.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	12(4.8%)
Medium	14 (16.1%)	66 (75.9%)	2 (2.3%)	1 (1.1%)	4 (4.6%)	87(34.7%)
High	63 (41.4%)	77 (50.7%)	3 (2.0%)	2 (1.3%)	7 (4.6%)	152(60.6%)
Total	83 (33.1%)	149 (59.4%)	5 (2.0%)	3 (1.2%)	11 (4.4%)	251

Chi square = 18.95 Degrees of freedom = 8
p value = 0.01511188 <---

The data has revealed that knowledge on the cause ,signs and symptoms on LF disease is still inadequate. Most respondents interviewed during in-depth interview cited health education given is not adequate, as a result community leaders find themselves at a point addressing health education while they know little about LF disease. *"Tulihamasisha wananchi ingawa hatukufundishwa" ("We went out to mobilise our fellow community members though we were not taught about the disease") -Male adult, 50 years – Bupu*

village LF committee. The community members think of LF disease condition only when physical manifestation can be seen *" Tangu tiba hii imeanza hapajatokea mgonjwa mwingine, na wenye ugonjwa hawajapona wanasubiria ufumbuzi" ("Since the program to give anti filarial drugs started individuals with hydrocele or elephantiasis who complied their problems remained the same and are still waiting for a solution for their problem)- Male adult, 47 years – Bupu village .*

You do not have the means to avoid getting it *"huu ni ugonjwa wa mungu" ("This is a pre destined cause by God")- Male adult, 47 years – Bupu village.*

4.0 Awareness of the NLFEP existence

Respondent's awareness of the existence of the NLFEP in their respective communities was assessed by using a specific checklist, which probed on whether respondents knew activities associated with LF programme in their villages, and health education methods used. Awareness was further categorised into 3 levels according to the general response of the respondents to the prepared checklist extracted from the structured questionnaires. Level 1 awareness means low awareness, level 2 means satisfactory awareness and level 3 means high awareness. From the study it was found that majority of the respondents despite of their high level of awareness did not know about the programme existence 49.4%(124/251), there is insignificant difference found between those who recognised the presence of the program and those who did not. The findings were statistically significant.

Qualitative analysis done, found high awareness in the community that LF is curable, eliminable disease. Health education is conducted on voluntary basis, and depending on the level of commitment amongst community leaders the standard of health education given is erratic and not systematic.

Table (8): Level of awareness by respondent's acknowledgement of the programme existence.

Level of awareness: Low means score of less than 3 in the awareness checklist (page 68)

Moderate means a score range of 4-6 in the awareness checklist

High means a score of 7 and above in the awareness checklist

	Heard LF Program		
Level of awareness	No	Yes	Total
Low	0(0.0%)	38(29.9%)	38(15.1%)
Satisfactory	0(0.0%)	52(40.9%)	52(20.7%)
High	124(100.0%)	37(29.1%)	161(64.1%)
Total	124(49.4%)	127(50.6%)	251

Chi square = 137.00
Degrees of freedom = 2
p value = 0.00000000 <---

Table (9):Level of awareness by satisfaction to health education given

Level of awareness: Low means score of less than 3 in the awareness checklist (page 68)

Moderate means a score range of 4-6 in the awareness checklist

High means a score of 7 and above in the awareness checklist

	Satisfaction		
Level of awareness	yes	No	Total
Low	30(81.1%)	7(18.)%	37(14.7%)
Satisfactory	50(94.3%)	3(5.7%)	53(21.1%)
High	82(51.0%)	79(49.0%)	161(64.1%)
Total	162(64.5%)	89(35.5%)	251

Chi square = 38.02; df = 2; P value = 0.0000000>----

Respondents were asked if the health education through any sources was adequate to dispel their fear and uncertainty on taking anti filarial drugs. It was found out that most respondents who had the highest level of awareness expressed dissatisfaction with the programme's mode of health education 49%(79/161), this was found to be statistically significant.

5.0 Effect of anti filarial drug side effect on compliance

Respondents were asked if during mass drug administration days were given any pre-counselling on possible side effects from the anti filarial drugs to be administered. It was found that only 15.5%(25/161) of the respondents received this information.

The study also found out that, most respondents did not trust drug distributors despite the fact that the drug distributors were selected from the villages they belong. However, only 12.4%(20/161) of respondents identified drug distributors as unknown to them.

Drug side effects was given as a reason for non-compliance by 14%(13/90) of the non-compliant respondents.

Most of the respondent's accounted fear for drug side effect and specifically impotence (20.1%(42/209) as being the major reason for non-compliance mostly mentioned by the community members. Side effects resulting from use of anti LF drugs is widely overestimated partly because of ineffective and inadequate health education given, which is limited within few days preceding the start of LF MDA campaign days.

Qualitative information from in depth interviews reveal misconception of the anticipated effect of anti filarial drugs. Many shortcomings experienced in previous years remain unanswered and carried forward to many of the community members dissatisfaction, i.e. *"most people believe the drugs given are not effective as they have failed to cure hydrocele and elephantiasis" – (Male adult, 72 years from bupu; village LF committee member).*

Due to difficulties experienced by the community leaders at getting a high turn up, some local authorities resort at threatening to take legal action against community members who will not come forward to get anti LF drugs i.e. *"The government should make an immediate follow up and absconders should be punished" (Male adult, 43 years – hamlet chairperson, Kimanzichana kusini village).*

LF committee members believe that the absence of appropriate health education allows wrong beliefs to persist in the community, preparedness of community LF committee mainly depends on an in-depth understanding of beliefs and concerns existing in their community and seek a collective solution through involvement of their fellow members. *"Some community members are questioning why are government officials giving us free anti LF drugs for a disease which does not kill and meanwhile sell anti malarial drugs?" (Male adult, 47 years – Bupu village, member of village LF committee), "Drugs are given to sick people" (Male adult, 42 years – farmer Kwa gongo village), "When I took the drug my hydrocele grew bigger" (Male adult, 34 years – affected, Kimanzichana*

kusini Most members of the community believe anti filarial drugs cause progressive decreasing libido, infertility and decreasing visual acuity. *), "I told my fellow community members that I took anti LF drugs and I was able to have 2 children since 2001" (Male adult, 24 years – Kimanzichana kaskazini, village health worker).*

Table(10): Reason for non-compliance by sex

	Sex		
Reason for refusing drugs	Male	Female	Total
side effect	9(69.2%)	4(30.8%)	13(14.4%)
Infertility	1(50.0%)	1(50.0%)	2(2.2%)
Didn't know where to get	0(0.0%)	1(100.0%)	1(1.1%)
Didn't trust drug distributors	19(56.0%)	15(44.4%)	34(37.8%)
I don't have LF	4(57.0%)	3(43.0%)	7(7.8%)
I had no permission from parent	0(0.0%)	1(100.0%)	1(1.1%)
I was away	14(70.0%)	6(30.0%)	20(22.2)
I was sick	1(50.0%)	1(50.0%)	2(2.2%)
LF drug shortage	0(0.0%)	1(100.0%)	1(1.1%)
didn't know	1(50.0%)	1(50.0%)	2(2.2%)
forgot	1(100.0%)	0(0.0%)	1(1.1%)
not considered important	3(60.0%)	2(40.0%)	5(5.5)
thought you just need once	1(100.0%)	0(0.0%)	1(1.1)
Total	54(60.0%)	36(40.0%)	90(100.0%)

Few of the respondents reported minor side effect after taking anti filarial drugs (Ivermectin + Albendazole) 7.2%(12/166)in the year 2003 or previous years since the programme was started. The study show respondents below the age of 40 years old had more reports of side effects than older age categories.

The result however could not be statistically demonstrated (chi square = 8.57, df = 6, p value = 0.199).

Table (11):Respondents with experience drugs side effect by age categories

	Respondents age groups (years)							
No of exp.side effect	0-19	20-29	30-39	40-49	50-59	60-69	70+	Total
Yes	**2 (17%)**	**1 (8%)**	**5 (42%)**	**2 (17%)**	**2 (17%)**	**0 (0%)**	**0 (0%)**	**12(7.2%)**
No	**41 (27%)**	**36 (23%)**	**25 (16%)**	**16 (10%)**	**13 (8%)**	**13 (8%)**	**10 (7%)**	**154(92.8%)**
Total	**43 (25.9%)**	**37 (22.3%)**	**30 (18.1)**	**18 (10.8)**	**15 (9.0)**	**13 (7.8%)**	**10 (6.8%)**	**166(100%)**

Chi square = 8.57 Degrees of freedom = 6 p value = 0.19917884

6.0 Association of level of formal education with treatment compliance

All of the respondents in the study were asked if they complied with anti filarial mass drug administration in year 2003, and their level of education was recorded. The study found that respondents who complied with treatment 26.7%(43/161) were actually of low educational level (who never attended school), and 65.8%(106/161) were those with primary education. There was no concrete association found in this study between the level of education and treatment compliance. This finding was statistically significant.

Table (l2): Compliance to anti filarial treatment by level of education

Level of education: 1-not attended school, 2-primary education, 3- secondary education, 4- college and above, 5- adult education

	Level of education					
.Compliance	1	2	3	4	5	Total.
Yes	43 (26.7%)	106 (65.8%)	2 (1.2%)	2 (1.2%)	8 (5.0%)	161(64.1%)
No	40 (44.4%)	43 (47.8%)	3 (3.3%)	1 (1.1%)	3 (3.3%)	90(35.9% .
Total	83(33.1%)	149(59.4%)	5 (2.0%)	3(1.2%)	11(4.4%)	251 .

Chi square = 10.29; Degrees of freedom = 4; p value = 0.03578725 <---

Table(13): Reasons for non-compliance by education level

Education Levels

1-Not attended school, 2-Primary school attended, 3-Secondary education attended, 4-College and above attended, 5-Adult education attended.

	Education levels					
Reason non-compliance	**1**	**2**	**3**	**4**	**5**	**Total**
1.side effect	7	5	0	1	0	**13(14.4%)**
2.Infertility	0	2	0	0	0	**2(2.2%)**
3.Didn't know where	0	1	0	0	0	**1(1.1%)**
Get to drug						
4.Didn't trust drug	15	16	1	0	2	
34(37.8%)						
distributors						
5.Dont have LF d`se	3	3	1	0	0	**7(7.8%)**
6.Had to get permission	0	1	0	0	0	**1(1.1%)**
from parents						
7.I was away	7	12	1	0	0	**20(22%)**
8.Sick	1	0	0	0	1	**2(2.2%)**
9.LF drug shortage	0	1	0	0	0	**1(1.1%)**
10.Didnt know	1	1	0	0	0	**2(2.2%)**
11.Forgot	1	0	0	0	0	**1(1.1%)**
12.Considereduniimportant	5	0	0	0	0	**5(5.5%)**
13.Thought you need once	1	0	0	0	0	**1(1.1%)**
Total	41	42	3	1.1	3	**90(100%)**
	45.6%	**46.7%**	**3.3%**	**1.1%**	**3.3%**	

Majority of respondents who did not comply with anti filarial treatment were also having low education level (illiterate – 45.6%(41/90) and 46.7%(42/90) of primary school level). Fear for drug side effect was not a major issue as only 5.2%(13/251) respondents gave it as a reason for not complying with treatment.

Non-compliance influenced by the fear of becoming infertile was given by only 2.2%(2/90) of the respondents, which is only 0.8%(2/251) of the total respondents in this study.

CHAPTER 5:DISCUSSION CONCLUSION AND RECOMMENDATIONS

5.1 Discussion

This study was designed to identify factors associated with non-compliance to anti-Lymphatic filariasis mass drug administration programme in Mkuranga District. Last round of mass drug administration was in October 2003.

This methodology is safe, effective, inexpensive and accepted globally for elimination of LF disease. Community acceptance of the strategy has not been strong as expected, its implementation is facing several problems which contributes to low anti filarial mass drug administration coverage rate in the district. A high coverage rate of 80% and above is necessary to achieve a reduction from high transmission rate to very low transmission in the district (Babu et al, 2002).

Possible factors for non-compliance

The study found that MDA coverage for Mkuranga District was 64%(161/251), major reasons given by the non-compliant respondents was; distrust towards drug distributors 38%(34/90) of non-compliant. This is a misconception attributable to the existing local beliefs toward the programme. Furthermore, inadequate education on LF disease has influenced the campaign to give drugs to be wrongly interpreted by some community members. It is believed that the programme aims at using them as guinea pigs. Distributors are seen as collaborators of that conspiracy against them. It was also found that absenteeism during campaigns was 22%(20/90) of non-compliant respondents or 8.0%(20/251) of total respondents. So long as the exercise took two weeks and a significant number of respondents were absent then the result infers that possibly respondents did not consider the exercise as important or the timing of implementing the exercise was not conducive. Fear for drug side effect was one of the least factors found in the study it accounted for 5.2%(13/251) of total respondents.

Health education factor is key to both factors mentioned, attitudes towards distributors, absenteeism and fear for drugs side effects are both signifying the gap in health education to be filled in order to effect a positive attitude and behaviour change toward anti-filarial MDA.

Awareness of the disease

The study found that 79%(200/251) of respondents have heard about LF disease. The finding is high and expected as the studied area is endemic to LF disease. Male respondents were more familiar with the disease than female respondents. This is partly explained by the fact that disease raise more interest among male population as they seem to be more affected from the disease (hydrocele formation). Men are also more outdoors giving them more time to sharing experience with other community members. Elephantiasis of the leg was the most common sign mentioned by respondents who have heard LF disease, this implies that majority of respondents consider an individual is having the disease only when overt signs and symptoms are visible. Early signs and symptoms are generally unknown, low level knowledge on clinical manifestations of the disease may negatively influence judgement on effectiveness of the factors to non-compliance similar findings was reported by Gyapong and Chinbuah, (2003). It was also found that contrary to the high awareness of the disease, a small proportion of respondents knew the cause of disease.

Knowledge on LF disease cause, signs, symptoms and prevention.

Generally, the results showed that there is high knowledge on cause, symptoms, and preventive measures of LF disease, though the findings were not statistically significant (P-value > 0.05). Statistical significant results were found on level of knowledge by age, sex and level of education. Health education provides the necessary information, and communication for change in beliefs, attitudes and behaviour. Low level of knowledge on the cause of the disease could be attributed to low level of health education received which was found to be inconsistent. Educators at the peripheral were mostly community

leaders with partial understanding of the disease. The study found that level of knowledge do not vary with increasing age, possibly the old generation are resistant to changes than the younger generation. This is different from what was reported by Babu et al (2004) who found that; age, gender, and educational level were identified as factors influencing awareness and knowledge on LF disease.

Programme awareness

Generally, there was a moderate level of awareness. Respondents with high level of awareness to the existence of LF programme attributed its existence with giving out drugs. Awareness on activities outside drug distribution was relatively low. This lack of information on other activities may be an indication of information gap on the programme. Similar findings are shared by (Weerasinghe et al, 2002).

5.2 Conclusion and Recommendations

Inadequate health education on LF disease to the community is a major contributing factor to treatment non-compliance. Limitation, both in duration and frequency of disseminating education was seen as a barrier during the campaign. Due to inadequacy in health information, other factors contributing to non-compliance such as distrust towards drug distributors and absenteeism were found.

These identified factors if well addressed would improve implementation of the programme. It is recommended that:

- Health education be conducted frequently throughout the year.
- Extension workers and community should get frequent orientation on LF disease.
- Drug distributors should be selected by the village public meeting instead of village authority alone.
- Social mobilization for MDA should start early.

- The programme should conduct annual survey on non-compliance.

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