Evaluation of Coverage and Compliance to Mass Drug Administration (MDA) for Lymphatic Filariasis Elimination – A Qualitative Study

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Abstract

Introduction: Mass Drug Administration (MDA) programme for the elimination Lymphatic Filariasis (LF) has been implemented globally since 1997. Even after 15 years of implementation, the programme has not achieved the coverage required to eliminate the disease in the stipulated period of time. The purpose of this study was to evaluate the coverage and compliance to MDA as perceived by the stakeholders and to find the reasons for noncompliance from a provider as well as client perspective. Qualitative methods like In-depth Interviews and Focus Group Discussions were used to conduct the study. None of the providers had perceived coverage of less than 70% or compliance of less than 30%. Non-realisation of the need for the programme and low drug-provider acceptability were major reasons for noncompliance as perceived by the officials and supervisors; whereas fear of side effects was the most common reason perceived by drug providers. From the client perspective, the presence of other morbidities was the most common reason for non-compliance. The false perception of high coverage by programme managers and other officials can be a stumbling block towards improving programme effectiveness. Innovative strategies were suggested by some of the stakeholders to improve coverage and compliance.

Keywords: Process Evaluation, Mass Drug Administration, MDA, Filaria, Qualitative methods, In-depth interviews, Focus group discussion, Coverage Evaluation


Introduction

Fifty percentage of the world population at risk of Lymphatic Filariasis infection lives in India. The country alone contributes 40% of the global filariasis disease load.1 The total disability adjusted life years (DALY) lost in India due to this disease are around 2.06 million, resulting in an annual wage loss of USD 811 million.2 In the state of Kerala in southern India, about 6 million people are at risk of the infection. The entire coastal area is endemic to the disease and there are several inland pockets of filariasis in Kerala.3 The strategies for global elimination of Lymphatic Filariasis (LF) has been well documented4 and extensively reviewed.5 Mass drug administration (MDA) is being implemented in India and Kerala since 1997.

Transmission of Filariasis can be interrupted through MDA only if high coverage (85%) of drug administration is maintained for a period of 4 - 6 years. Current approaches to drug delivery do not achieve this target.6 Almost all published studies done to assess coverage of MDA have used the quantitative approach. A qualitative approach provides an excellent opportunity to tap in to the meanings and interpretations given by people to explain their behaviour. This study has been done using qualitative methods, as part of a process evaluation to get an insight into the provider perspective of coverage and compliance to MDA. It aims to explore the reasons for noncompliance from different stakeholder points of view in order to provide positive directions towards policy change for improving coverage and compliance.

Methods

This study was part of a larger study which also included a cross sectional study to evaluate coverage and compliance.7

Study Design: Descriptive Qualitative methods like In-Depth Interviews (IDI) and Focus Group Discussions (FGD) were used to collect information from key stakeholders. IDI was the predominant method used. FGD was used to supplement the information obtained from IDI, for data triangulation and to ensure that the entire range of information was captured.

Setting: Community setting of Thiruvananthapuram district of Kerala, India.

Study Population: Study population included the stakeholders in the programme from various categories namely

*See End Note for complete author details
• Programme Managers and Medical officers - 8
• Supervisory staff /supervisors - Health supervisors, Health Inspectors and Health Workers - 12,
• Drug Providers - 7 and
• Clients - 24 (12 compliant and 12 non-compliant persons).

A compliant person was defined as one who reported to have received the drug and consumed it, irrespective of the way in which they consumed the tablets. A Non compliant person was one who reported to have received the drug but did not consume it.

Sampling Techniques: Stratified Purposive Sampling.
Sample Size: 51 In-Depth Interviews (IDI) and 4 Focus Group Discussions (FGD) were conducted. Redundancy of information was the criteria for deciding on sample size.

Development of Tools: Interview schedules and FGD guides were prepared based on an understanding of the process dynamics as per the Operational Manual of National Filariasis Control Programme and the State Action Plan. Interview schedules and reports of process evaluations of other programs in the country were also used as reference. The schedules were first drafted in English and then translated to local language and back translated to verify accuracy of translation.

Techniques: After obtaining consent from state health authorities, In-Depth Interviews were conducted with Programme managers, Medical Officers, supervisors and volunteers as and when appointments were obtained with them. In depth interviews from the clients, both complaint and non compliant were done at their homes, during the survey for the coverage evaluation part of the study. FGDs of supervisors, volunteers and clients were organized at nearby health centers.

Quality Assurance Measures: The development of interview schedule has been done using the operational manual of the programme as guide and was discussed with the actual users of the manual. Audio recording of interviews and discussions were done to give credence to the conduct and validity of interviews; to supplement for the statements missed out during writing of field notes and to cross check the transcribed schedules. To guard against subjective interpretations by the investigators, the transcribed data had been independently interpreted by an expert in qualitative research.

Data analysis

Transcription: All interviews were transcribed verbatim in the corresponding schedules. This was followed by translation of relevant data.

Free Listing: The responses to particular questions were listed to obtain the full range of responses for all questions in the schedules for every category of stakeholder. A unique number was assigned at the end of every statement so that each response could be tracked to the respondent. The responses considered irrelevant under a specific question was moved to the appropriate section. During the process, important statements by the stakeholders were marked for use in the report as quotations.

Domain Identification: Domains were evolved on the basis of responses that conveyed homogenous perceptions. Efforts were made to retain common domains on similar issues across stakeholder categories to enable comparisons.

Coding: Numerical codes were given to the identified domains

Summarizing: Free listed items were coded and summarized. Quotable quotes were used appropriately. The results are presented as an ethnographic summary. Wherever possible, the observations have been described in semi quantitative form using qualifiers as shown in Table 1.

<table>
<thead>
<tr>
<th>Proportion of respondents</th>
<th>Qualifier Used</th>
<th>Adjectives used</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10%</td>
<td>&lt;1+</td>
<td>Very few</td>
</tr>
<tr>
<td>10-24%</td>
<td>1+</td>
<td>Some</td>
</tr>
<tr>
<td>25-49%</td>
<td>2+</td>
<td>Approximately</td>
</tr>
<tr>
<td>50-74%</td>
<td>3+</td>
<td>Majority / Over</td>
</tr>
<tr>
<td>75-89%</td>
<td>4+</td>
<td>Most</td>
</tr>
<tr>
<td>90% &amp; above</td>
<td>5+</td>
<td>Almost all</td>
</tr>
</tbody>
</table>

Results

Coverage and Compliance

The coverage perceived by programme stakeholders was in the range of 70 - 95%. None of the officials, supervisors and volunteers had perceived a coverage of less than 70% or compliance of less than 30% (Tables 2 & 3). Some were of the opinion that the coverage and compliance have been increasing over the years. Only few volunteers had an impression about coverage.

<table>
<thead>
<tr>
<th>Coverage</th>
<th>Officials (n=8)</th>
<th>Supervisory paramedical staff (n=12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>71-80%</td>
<td>2+</td>
<td>2+</td>
</tr>
<tr>
<td>81 to 90%</td>
<td>2+</td>
<td>1+</td>
</tr>
<tr>
<td>&gt; 90%</td>
<td>1+</td>
<td>2+</td>
</tr>
</tbody>
</table>

As part of the process evaluation, questions were asked to the stakeholders on suggestions to improve coverage. Booth level administration of drugs with directly observed treatment (DOT) has been suggested as a strategy for improving coverage by some (2+) stakeholders. Administration of drugs in public places was another suggested strategy. There was a suggestion that office and work place based delivery should be enhanced.
Table 3. Perceived Compliance by Stakeholders

<table>
<thead>
<tr>
<th>Compliance</th>
<th>Officials (n=8)</th>
<th>Supervisors (n=12)</th>
<th>Volunteers (n=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-40%</td>
<td>2+</td>
<td>1+</td>
<td></td>
</tr>
<tr>
<td>41-50%</td>
<td>1+</td>
<td>2+</td>
<td>3+</td>
</tr>
<tr>
<td>51-60%</td>
<td>1+</td>
<td>1+</td>
<td></td>
</tr>
<tr>
<td>&gt;60%</td>
<td>2+</td>
<td>2+</td>
<td>3+</td>
</tr>
</tbody>
</table>

Other suggestions include:

a. Involving the private sector in drug delivery;
b. Extending the programme implementation to over a month ending on the day of MDA, during which period anyone who visits a hospital has to be advised and given the drug to be consumed;
c. Making use of other existing public delivery systems;
d. Shifting to community directed treatment (Com-DT) where the ownership of the programme will be on the community;
e. Use of medical and paramedical students for drug delivery;
f. Using school and college students with uniform;
g. More involvement of men in drug delivery;
h. House to house campaign in groups / teams to make programme more visible and
i. Schools being given a holiday on the day.

Reasons for Noncompliance

**Provider Perspective:** Almost all (5+) the officials and approximately half (2+) of the supervisors said that the reason for noncompliance was people not being convinced of the need for such a programme. In response to a question on identification of the health problems in the area, none of the programme officers mentioned filariasis as a problem. Compared with other health problems in the area, filariasis was perceived as a problem only by some (1+) of the officers, while it was perceived as a problem by over half (3+) of the supervisors. Most of the volunteers tried to justify the programme, saying that filariasis causes serious and lifelong morbidity. For any programme to be successful, all the stakeholders should be convinced about the need for it. In the case of MDA, only approximately half (2+) of the programme officers and medical officers were convinced about the need of MDA whereas almost all (5+) the supervisors and volunteers were convinced. A medical officer responded as follows:

“I don't think it is a felt need. I accept it because I am a government employee. Besides the tablet is not harmful and if there is anybody with microfilaria, they will benefit. We are facing so many other problems daily. No medicine for common ailments. In between that, this is not at all a problem. When they come asking for tablets for diabetes and we give drugs for filariasis, it seems like a joke.” -Medical Officer

Non-acceptability of drug distributors was mentioned as a reason for non-compliance by almost all (5+) the officials, but very few (1+) of the supervisors. Some (1+) of the officials and supervisors reported that volunteers are not acceptable to the people as drug providers. Some quotes:

“Especially in urban areas when less educated volunteers give the medicine, the more educated people find it difficult to accept.” - Officer

“When volunteers gave, they did not accept, later when the health workers gave, they took the tablet. Some people keep the tablet with them, only when we health workers go and tell them they take it.” - Supervisor

Some officials and some medical officers opined that poor acceptability of the health system delivering the drugs was the reason for noncompliance.

“If we had a system which caters to all the real health needs of the people and also delivers the drug for filariasis, the result of the programme would have been different” - State Level Officer.

A method to increase acceptability of volunteers would be to select people from their own area; which has been stated as the reason for their acceptability by some providers.

Table 4. Reasons for non compliance: Provider perspective

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Officers (n=8)</th>
<th>Supervisors (n=12)</th>
<th>Volunteers (n=7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not convinced of need</td>
<td>5+</td>
<td>3+</td>
<td></td>
</tr>
<tr>
<td>Drug distributors not acceptable</td>
<td>5+</td>
<td>1+</td>
<td></td>
</tr>
<tr>
<td>Fear of side effects</td>
<td>2+</td>
<td>2</td>
<td>3+</td>
</tr>
<tr>
<td>Drug not acceptable</td>
<td>1+</td>
<td></td>
<td>2+</td>
</tr>
<tr>
<td>Other morbidities</td>
<td>1+</td>
<td>1+</td>
<td></td>
</tr>
<tr>
<td>System not acceptable</td>
<td>1+</td>
<td>1+</td>
<td>1+</td>
</tr>
<tr>
<td>Negative propaganda</td>
<td>2+</td>
<td>1+</td>
<td></td>
</tr>
<tr>
<td>Less of IEC/lack of awareness</td>
<td>1+</td>
<td>1+</td>
<td>1+</td>
</tr>
<tr>
<td>Others (forgetful, peoples peculiarity, no societal commitment, no reason, religious)</td>
<td>2+</td>
<td>2+</td>
<td></td>
</tr>
</tbody>
</table>

Fear of side effects was perceived as a reason for non-compliance almost equally across all the stakeholders’ categories (Table 4).

Table 5. Reason for noncompliance: Client perspective

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Clients (n=24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other morbidities</td>
<td>3+</td>
</tr>
<tr>
<td>Fear of side effects</td>
<td>2+</td>
</tr>
<tr>
<td>Volunteer not acceptable</td>
<td>2+</td>
</tr>
<tr>
<td>No disease</td>
<td>1+</td>
</tr>
<tr>
<td>Drug not acceptable</td>
<td>2+</td>
</tr>
<tr>
<td>Client characteristic</td>
<td>2+</td>
</tr>
<tr>
<td>Others (drug given to child, no benefit, others not taking)</td>
<td>2+</td>
</tr>
</tbody>
</table>
Client perspective: Reasons for non-utilization as stated by non-compliant clients are given in Table 5. The presence of other morbidities has been stated as a major reason for non-utilization by majority of non-compliant clients. This has been complimented by the non-acceptability of volunteers, as the people trusted only doctors. These concerns are reflected in many statements by non-utilizers as given below:

“I have hypertension, I don’t know how taking the drug will affect my health. I must get a doctor’s advice.” - Non-Utilizer

“We have many other illnesses. We don’t take any medicine without doctor’s prescription. That is what doctors also advice. If something happens whom shall we ask. If the doctors whom we trust say, we will take. They should give the drug only after examination by a doctor and the doctor says, no problem you can take.” – Non – Utilizer

The peculiarity of people mentioned in Table 5 was that some people had an unrealistic optimism, that they are less likely to get any disease. Some others attribute everything to fate.

“If destiny decides that we should get the disease, it will occur, whether we take the drug or not”.

Some believed that the appearance of the drug has a role in its acceptability. One medical officer said:

“Drugs can be made into blister packs for the three age categories with different color for each category. These strips will then have the name, expiry date etc. on the pack, which will increase the acceptability of the drug. If possible, the number of tablets and the size of the drug should be reduced, subject to technical consultations.”

Discussion

Periodic evaluations are crucial for improving any programme. Process evaluations are done with a perspective of programme development and hence qualitative methods are most appropriate. The evaluation has been done with a phenomenological view, with an aim of understanding the programme from the viewpoint of the stakeholders. The focus was on meanings and interpretations in order to explain behaviour rather than give evidence.

The core method used was in-depth interview. Focus group discussions were used as preliminary work for the development of schedules and finally to see whether the range and depth of information has been completely tapped. There were questions relating to all aspects of the programme under the broad heads of pre-MDA, MDA and post MDA activities. This article has focused on the outcome of the process of MDA in terms of the perceived coverage and compliance by the stakeholders, and reasons for noncompliance from the perspective of providers and clients.

This study brings out clearly that the key stakeholders in the programme do not perceive the coverage of MDA as low. The coverage evaluation done as part of this same study, using quantitative methods has found the coverage to be only 52.3 % (46.5-58.1). This is almost similar to the coverage of 56% reported in a study done in 6 districts of the same state by the Regional Filaria Research and Training Center. The perception of high coverage may be due to the fact that officially reported coverage was as high as 91.4% for the 2007 round of MDA.

The perceptions of compliance are also in sharp contrast with evidences from field studies. This highlights the need for bringing to light results of independent evaluation by external agencies. It is important that officials understand and acknowledge the ground reality so that they can take measures to improve coverage.

Based on the understanding of the process dynamics, the suggestions put forward by the stakeholders need to be favorably considered as alternative strategies for drug delivery. The advantages of having booth level administration of drugs as seen in pulse polio immunization programme are that it will increase the visibility of the programme and ensure a certain degrees of compliance. Administration of drugs in public places as Directly Observed Treatment (DOT) would help in marketing the programme and act as an effective propaganda. Besides, the presence of a health staff will increase the confidence of the people in the programme and thereby improve the acceptability of the programme.

Delivering drugs in offices and work places are important as this could provide opportunities for mass education; especially in urban areas, where people may not be available in homes during day time. This would also indirectly increase the consumption among other household members, because the earning members of the family are usually the decision makers. These strategies however, have to be tested on a pilot basis for epidemiological evidence, before implementation on a large scale.

Non-perception of the need for the program emerged as a major factor triangulating the evidence from the quantitative study as well. While providers stated this as a major reason; clients perceived this as a reason only to a much lesser extent. Another factor that emerged was the low acceptability of drug providers. The most important factor that determines compliance is the interplay between client and drug provider; which transforms real need to felt need by the client. Drug provider acceptability has to be enhanced in order to make people realize the need, which can be accomplished only if the providers are adequately trained in this direction.

Health Education strategies need to be strengthened to provide the clients a better perception of the need for the programme.
Intensive campaigning needs be done through mass media to remove the fears of adverse events from the minds of people. The safety of the drug in co-existing morbidities needs to be highlighted.

Elimination of Lymphatic Filariasis is achievable\(^\text{11}\) as there are many factors that favor this.\(^\text{12}\) Many countries have successfully eliminated the disease\(^\text{13,14}\) and MDA is a key strategy towards attaining this goal.\(^\text{15}\)

**Conclusions**

The most critical determinant for the elimination of the disease in the stipulated period of time is achieving high coverage and compliance and the whole process of programme implementation has to be geared towards this. Program stakeholder perspectives on coverage need to be oriented rightly. Alternative drug delivery strategies need to be evaluated and implemented. Providers need to be given comprehensive evidence based training on the need of the programme. Enhanced health education campaigns at all levels should focus on removing misconceptions about the programme.

**End Note**

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**Conflict of interest**

None declared

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