ISSN- 0301-1216
Indian J. Prev. Soc. Med. Vol. 54, No.4, 2023

Assessment of Mass Drug Administration its gaps and challenges in Tikamgarh District of Madhya Pradesh

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ABSTRACT

Introduction: Lymphatic Filariasis is endemic in India, thus annual mass drug administration (MDA) with diethylcarbamazine (DEC) and albendazole is done. Continued administration for 4-6 years with >65% coverage will interrupt the transmission of filariasis. This study aims to find out the reasons of noncompliance and the operational issues in MDA. **Objectives:** [1] To review the coverage and compliance of DEC + albendazole [2] To assess the implementation of MDA and find out the gaps and challenges. **Methodology:** Four clusters, one urban and 3 from rural, were selected by multistage random sampling. From 4 blocks selected, 1 urban ward and 3 PHC were selected, 1 village from each PHC was surveyed for 30 households. Results: 785 people were surveyed in 120 households from 4 blocks, 96.2% (754) were eligible population. 75% (567) were above 15 years, 19% (141) were 5-14 years of age and 6% (46) were 2-4 years of age. 91.4% (689) people received tablets during the MDA, 74.5% (513) ingested the tablets. 33.1% (228) ingested in the presence of drug sewak and 70.7% (487) after food. **Conclusion:** Coverage of consumption far below the reported coverage of the district. Lack of awareness and poor counselling and IEC were found to be major reasons for lack of compliance.

Keywords: Mass Drug Administration, Filariasis, Elephantiasis, DEC, Albendazole, Lymphatic Filariasis

Introduction

Lymphatic filariasis is a disabling and disfiguring disease which is due to the damaged lymphatic system. It is usually acquired in early years of life and at this stage, it is a symptomatic this stage lasts for several years but the patient remains an active carrier for the disease. The physical consequences include hydrocele, painful swollen limbs. World Health Organization (WHO) regional strategic frame work for control/elimination of Neglected Tropical Diseases (NTDs) and WHO NTD aims for LF elimination by 2020 and in line with the global targets the National Health policy also has set the goal for elimination of LF by 2015 which was later extended to 2021 in India. It is a major public health problem in India, 256 districts of 16 states have reported indigenous cases of filariasis.

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Submission	07.11.2023	Revision	13.11.2023	Accepted	26.11.2023	Printing	30.12.2023

Prior Publication*: Nil*; Source of Funding:* Nil; *Conflicts of Interest*: None, *Article #40/133

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Two pillar strategies for eliminating lymphatic filariasis which have been adopted are Mass Drug Administration (MDA) for interruption of and Morbidity Management and Disability Prevention (MMDP) for catering the disease afflicted patients. MDA started as a mass campaign in 2004 with a single dose administration of DEC which was later changed to DEC + Albendazole co-administration in 2007. In 2018 Triple Drug Therapy (IDA) i.e. DEC + Albendazole + Ivermectin is launched on pilot basis in five selected districts.

Monitoring of implementation is an inbuilt component of the MDA programme. 2020 was the 17th year of MDA in Tikamgarh and Niwari district was conducted on 27th to 29th December 2020. Mid-term assessment was conducted to review the progress of activities and program implementation of mass drug administration and Recommend mid-course corrections to bring effective control of filarial in the two districts.

Aim:

Quantitative: To assess the coverage and compliance of MDA in Tikamgarh district.

Qualitative: To synthesize qualitative research evidence about barriers and challenges in programme implementation, community experience and perception of, MDA programmes for filariasis.

Methodology

Study Design: Convergent parallel (Quan + qual)

Study Plan: A convergent parallel mixed method study was designed for assessment of mass drug administration for Filariasis.

Quantitative component: Four clusters, one from urban ward and 3 from rural areas were selected from the two districts combined. Since almost all the sectors and blocks had coverage of 70% or more, these clusters were selected randomly by a two stage random sampling. The villages/ ward selected were-

[1] Jatara (Block)– Ward 4,

[2] Niwadi (Block)– PHC - Niwari- Village -Asati (District Niwadi),

[3] Baldevgarh (Block)– PHC -Baisa- Village –Larwari,

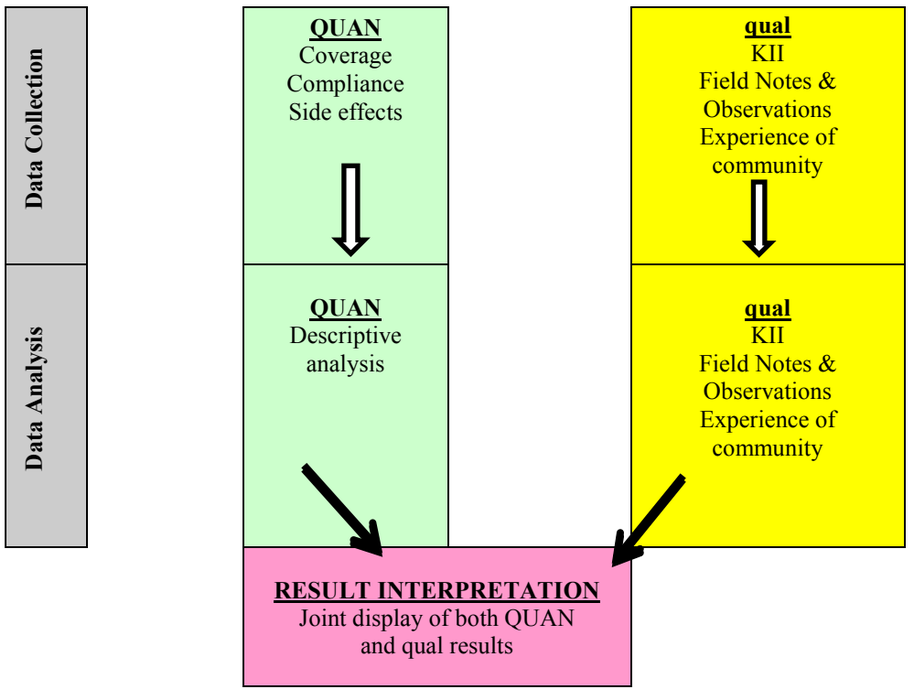
[4] Badagaon (Block)– PHC -Astone- Village – Pander.

Thirty households from each cluster were surveyed using a predesigned questionnaire. In all the four selected clusters first house was selected randomly and then 29 consecutive houses was selected based on availability of adult family members. If there were small pockets or isolated areas, some houses were covered in those areas also.

The questionnaire included assessment of following parameters: Number of tablets of Albendazole and DEC given in the family, whether health workers explained the purpose of MDA, whether health worker made the people swallow the tablets in front of them, whether people actually consumed the tablets and if yes, the number of tablets consumed to assess for consumption of partial or full dose, to assess if the people experienced any adverse effects and if yes, what was their treatment seeking behavior and source of information about MDA and filariasis/elephantiasis. Coverage was assessed in terms of proportion of people who received the drug for prevention of filariasis and compliance on the basis of the proportion of people who received and ingested the drug.

Qualitative component: To assess the barriers and challenges in programme implementation key informant interview was organized with DMO, MO, MI and ASHA to assess planning and implementation of MDA (meeting, inter-sectoral coordination, administrative and political commitment, IEC and training) were assessed using records, photographs, audio and video recordings. To assess the community experience and perception of MDA for filariasis open ended questions were included in the questionnaire and thematic analysis was done. Field notes and observations were recorded to strengthen the qualitative component of the study.

Integration: the study conducted was integrated at the level of data interpretation.



Results

Table-1: Population surveyed in the district Tikamgarh and Niwari

Sl. No.	Name of Block	Name of Health Facility	Name of Village/ Ward	Survey Population	Less than 2 year	Eligible Population
1	Niwadi	PHC Asati	Asati Khas	190	12	178
2	Baldevgarh	PHC Baisa	Larwai	172	4	168
3	Badagaon	PHC Astone	Pander	186	6	180
4	Jatara	Urban	Ward no 6	237	9	228
Total				**785**	**31**	**754**

The above table-1 shows the details of the population surveyed to evaluate the MDA administration in Tikamgarh and Niwari district. Thirty households were surveyed in each cluster; all the members of the family except children less than 2 years of age were included in the study.

Table-2: Age wise distribution of the eligible study population

Name of Village/ Ward	Eligible population	Age groups					
		2-5 years		6-14 years		≥15 years	
Asati	178	13	7.3	29	16.3	136	76.4
Larwai	168	12	7.1	29	17.3	127	75.6
Pander	180	8	4.4	32	17.8	140	77.8
Ward no 6	228	13	5.7	51	22.4	164	71.9
Total	**754**	**46**	**6.1**	**141**	**18.7**	**567**	**75.2**

In table-2 majority 75.2% of the people were aged 15 years and above, 18.7% people were of age 6 to 14 years and 6.1% were aged between 2 years to 5 years. The study population is divided into such groups because children below the age of 2 years are not eligible for MDA, Children aged between 2 years to 5 years are to be given 1 DEC tablet and 1 Albendazole tablet, children aged 6-14 years are to be given 2 DEC tablet and 1 Albendazole tablet and people 15years and above are to be given 3 DEC tablet and 1 Albendazole tablet

Table-3: Tablets received as per the guidelines by the study participants

Name of ward/ village	Eligible population	Tablets received				Received inappropriate dose		Received appropriate dose	
		Yes		No					
		No.	%	No.	%	No.	%	No	%
Asati	178	162	91.0	16	9.0	15	9.3	147	90.7
Larwai	168	153	91.1	15	8.9	18	11.8	135	88.2
Pander	180	155	86.1	25	13.9	12	7.7	143	92.3
Ward no 6	228	219	96.1	9	3.9	38	17.4	181	82.6
Total	**754**	**689**	**91.4**	**65**	**8.6**	**83**	**12.0**	**606**	**88.0**

The above table-3 shows the proportion of study participants who received tablets by the drug sewak out of the total population surveyed eligible population was 754 people i.e. people aged 2years and above; amongst which 91.4% received the drugs whereas out of these 689 people 606 received the appropriate dosage of the DEC drug as per the recommended guideline (88%). Found to be 68.2% as 514 people out of the total 754 eligible people ingested the drugs. Inappropriate doses have been given in all age groups in all the 4 areas surveyed. Errors in dosage are highest for 5-14 year age group followed by 2-4 year age group. An error in the age group ≥ 15 years is very low in all the areas.

No such discrepancies in distribution of Albendazole tablets were found as only one tablet of 400 mg is to be given irrespective of age hence not tabulated.

Table -4: Presence of Drug Sewak and Post meal status before consumption of the drugs

Name of Village/ Ward	People who received drugs	Drugs ingested				Drugs ingested in presence of drug sewak		Drugs ingested after meals	
		Yes		No					
		No.	%	No.	%	No.	%	No.	%
Asati	162	154	95.1	8	4.9	62	38.3	149	92.0
Larwai	153	117	76.5	36	23.5	77	50.3	108	70.6
Pander	155	138	89.0	17	11.0	69	44.5	132	85.2
Ward No 6	219	104	47.5	115	52.5	20	9.1	98	44.7
Total	**689**	**513**	**74.5**	**176**	**25.5**	**228**	**33.1**	**487**	**70.7**

According to the guidelines the ingestion of DEC + Albendazole tablets has to be under the supervision of the Drug sewak after meals. Amongst the people who received the drugs only 74.5% actually ingested them rest of participants discarded them. Only 33.1% of the study participants reported that the ingested the drugs under the supervision of the Drug sewak and 70.7% took the drugs post cibum **(Table-4).**

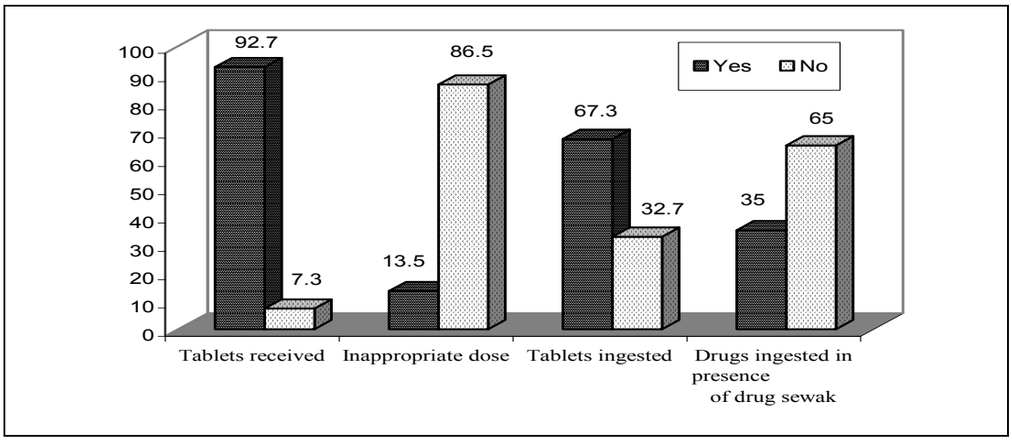
Table-5: Comparison of MDA distribution in urban and rural areas

MDA distribution	Urban area (N=228)				Rural area (N=526)				P value
	Yes		No		Yes		No		
	No.	%	No.	%	No.	%	No.	%	
Tablets received	219	96.1	9	3.9	470	89.4	56	10.6	**<0.05**
Inappropriate dose	38	17.4	181	82.6	45	9.6	425	90.4	**<0.05**
Tablets ingested	104	47.5	115	52.5	409	87.0	61	13.0	**<0.001**
Drugs ingested in presence of drug sewak	20	19.2	84	80.8	208	50.9	201	49.1	**<0.001**
Drugs ingested after meals	98	94.2	6	5.8	389	95.1	20	4.9	**>0.05**

The **table-5** shows that there significant difference was seen on comparison of MDA distribution in rural and urban areas . Although the proportion of participants who received drugs in urban areas (96.1%) was more compared to rural areas (89.4) but the proportion of participants who ingested the tablets in rural areas (87.0%) was significantly more compared to urban areas (47.5) **(p<0.05)**. Inappropriate doses of of DEC was given to 17.4% of the urban population whereas only 9.6% such cases were seen in rural areas **(p<0.05).** Only 19.2% of the drugs were ingested in presence of drug sewak in urban area which was signifincntly less compared to rural areas (50.9%). No significant difference was seen in the comsumption of drugs post cibum in both rural (94.2) and urban areas (91.5%).

Table -6: Joint display

Figure-1: Proportional distribution of coverage and compliance in all the surveyed population



Themes	Sub theme	Codes	Filed notes, observations and verbatim
Coverage	-Tablets received	Not present at home	• Those members who migrated to other cities were also included in the family drug register. • People who had left for work early in the morning did not receive the drugs
			• "Mop up round was not done for those who were left in first round of observation." - DMO Tikamgarh
			• Poor monitoring of supervisors.
	-Inappropriate dose	Inaptitude of ASHA	▪ There was dispute between ASHA of the selected cluster hence out of rivalry a whole patch of household was left that were not given drugs.
			▪ Drug distribution was done by husband of ASHA worker and Son of Anganwadi worker in one of the villages.
			▪ The ASHA refused to go to distribute the drugs to a pocket/area where schedule caste community lived.
			▪ Distribution through voluntary worker was not seen in any of the selected villages in the study.
Compliance	-Fear and previous experience of ADR	Poor IEC	➢ We were not informed why is this drug distributed"- elder male resident
			➢ We don't have any disease why should we take the drug unnecessary"- Resident of village
			➢ ***Kya Pata Kis Cheez Ki Dawai Di Thi Kuch Ulta Asar Kar Deti***
		Chronic illness	"Ongoing treatment of tuberculosis so the different drugs should not be mixed" –ASHA worker
			"Pre-existing diabetes so did not take the medicine" – Resident
		Children	"***Chhota bachcha hai dawa ka galat asar ho skta hai…"-*** Village Resident
			"***Keedey maarne ki khila di bas dusri dawai ki jaroorat nahi thi…***"- Resident of urban area
		Forgot to take medicine	"Mostly the drug was distributed after 10 am in the morning so many of the villagers had already left for farms/work/school. Hence, I gave them the medicine to be taken afterwards"- ASHA
			"***Chhotey bete ko deke gye the wo kahi rakh ke bhool gya***" – Resident.

In the above **table-6** the above table the majority loop hole found during the survey was that the ASHA were not well trained and IEC was not properly. However there was no shortage of supply of drugs the only shortcomings were in the distribution and utilization process.

Discussion

In the present study 785 people were surveyed in 120 households from 4 blocks, 754 (96.2%) were eligible population. 567 (75%) were above 15 years, 142 (19%) were 5-14 years of age and 46 (6%) were 2-4 years of age. 689 (91.4%) people received tablets during the MDA, 513 (74.5%) ingested the tablets and 228 (33.1%) ingested in the presence of drug Sewak and 487 (70.7%) after food. Actual coverage is far below the average reported coverage of the district (68.1% vs 85.3%). Errors in dosage are highest for 5-14 year age group followed by 2-4 year age group. More than 95% of the population received the drugs in all the surveyed areas but actual consumption was much lower. Urban areas were found to be the least performing in terms of distribution, consumption as well as awareness.

Bansal et al[2] reported a higher coverage of 80.42 and 95.01 respectively, and compliance of 84.50 and 85.55 in Rewa and Chindwara districts of Madhya Pradesh, respectively. The proportion of participants who swallowed drugs in presence of drug distributor was found to be low in their study also.

Krentel A et al [3] also concluded that Low MDA compliance can be attributed to MDA delivery system and the characteristics of target recipients; issues at programmatic level like inadequate IEC also affected the advocacy.

Conclusion and Recommendation

Actual coverage is far below the average reported coverage of the district (68.1% vs 85.3%). The coverage is worse in the urban areas. The tablets have been distributed to more than 95% of the population but consumption of tablets by the families who received the drug is less (92.5 vs 68.1%). The visit is not repeated by the drug distributor to ensure consumption of drugs to members who were absent at the time of previous visit or who refused to take the drug because of empty stomach. This led to poor compliance seen in the evaluation. Lack of human resources and ASHAs are frequently overworked with many health programmes ongoing at any given time, which limits their ability to participate in MDA of LF medicines.

Poor IEC and sensitization of the population about the need and benefits of MDA is a major reason for poor compliance. The drug distributors have not sufficiently counseled the people regarding the purpose and importance of drug consumption. This was more prominently seen in urban areas. Error is dosage is mainly seen in children varying from 20-50%, this had led to lower dose consumption. Lack of supervision of the program at the field level was also noticed. Marking at the walls of the houses was missing in many houses both in the urban and rural areas.

For this increase in IEC activities and knowledge of ADRs is required. The majority of population was unaware of the purpose and any potential ADRs associated with LF medicines. Given that the fear of ADR continues to be one of the main causes of noncompliance, this gap in the communication of essential information needs to be carefully explored.

Despite Political support and ample funds being available the compliance of the community for MDA remains low. Strengthening of IEC to improve social acceptance of the program in the community Better counseling to family members will help in the compliance of drug consumption. Greater involvement of Panchayati Raj members and local leaders, Self-help groups and a team of active members in the community should be done for advocacy and community mobilization. The drug distributors should ensure consumption in their presence by making repeated visits to the family.

Scale up drug administration camps at schools: Whilst such camps will be extremely helpful and should be scaled up. They not only increased consumption of drugs amongst children but also raised awareness amongst parents about LF drugs.

Acknowledgements: We wish to express our sincere gratitude to NHM and the Health department of the district Tikamgarh for their full cooperation and assistance in the survey. This study would not have been possible without Dr Alpesh Bharia, District Malaria Officer who coordinated and helped in managing the problems we faced while doing assessment at the district. Last but not the least we would like to express our gratitude to Dr Aruna Kumar, Dean, Gandhi Medical College and Dr D.K Pal, Professor and Head, Department of Community medicine for giving us opportunity to do the assessment of Mass Drug Administration (MDA) of Albendazole and diethylcarbamazine (DEC).

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Citation: Bansal M., Singh N., Kamble M. Assessment of mass drug administration its gaps and challenges in Tikamgarh District of Madhya Pradesh. Indian J Prev Soc Med, 2023; 54 (4): **166-174.**