EVALUATION OF MASS DRUG ADMINISTRATION FOR FILARIASIS IN BOUDH DISTRICT, ODISHA

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ABSTRACT**BACKGROUND**

Lymphatic Filariasis (LF) is one of the oldest and most debilitating neglected tropical diseases, recognised by World Health Organisation (WHO) as a group of parasitic infections which primarily affect people living in extreme poverty. Nearly, 2.5 crore population of Odisha living in 20 endemic districts are at risk with 5 to 10 percent of them suffering from various manifestations of the disease. Annual Mass Drug Administration (MDA) of single dose of Diethylcarbamazine citrate (DEC) and Albendazole to the eligible population is carried out to interrupt transmission of the disease.

Objectives- To estimate the coverage of MDA in the households of Boudh district and to enlist the reasons for non-consumption of the drug.

MATERIALS AND METHODS

A cross-sectional study was conducted in Boudh district in the month of October 2016. Data was collected from 1547 beneficiaries (300 households of rural and urban combined) in a predesigned, pretested questionnaire and was analysed using MS Excel.

RESULTS

Among the 1547 beneficiaries in the surveyed population, the coverage of drug consumption among the beneficiaries was 87.9% (Boudh), 94.9% (Kantamal) and 85.3% (Urban). The most common reason for not consuming drugs in both urban and rural area was due to fear of side effects of the drug (77.04%, 70.6% respectively). Out of 300, 3.6% households had no information regarding MDA. ASHAs were the source of information in 55.3% of households followed by AWWs (40.3%). Side effects due to drugs were present in 2.5% of rural beneficiaries and 0.2% of urban beneficiaries.

CONCLUSION

The MDA coverage in rural areas is more than urban areas. Fear of drugs is the major reason for not consuming the drugs.

KEYWORDS

Lymphatic Filariasis, MDA, DEC, Evaluation.

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BACKGROUND

Lymphatic Filariasis (LF) is one of the oldest and most debilitating neglected tropical diseases, recognised by the World Health Organisation (WHO) as a group of parasitic infections which primarily affect people living in extreme poverty.¹ It is caused by lymphatic dwelling nematodes namely *Wuchereria bancrofti*, *Brugia malayi* and *Brugia timori*, and transmitted by the bite of infective mosquitoes.² The most common agent causing LF is *W. bancrofti* (90%).² Although LF is not fatal, it can lead to disfigurement, disability and chronic pain, which in turn leads to social stigma and discrimination. As a result, many people suffering from it are unable to lead a socially and economically productive life.

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Lymphatic filariasis infection is found in nearly 120 million people in 83 countries of the world and more than 1.1 billion people are at risk of acquiring infection, which is 20% of the world's population. Severe disfigurement and disability caused by filariasis are found in over 40 million people and 76 million are apparently normal, but have hidden internal damage to lymphatic and renal systems.³ According to the World Health Organisation, 4 countries viz. India, Indonesia, Nigeria and Bangladesh are major contributors (Near about 70%) of the infection worldwide.¹

The Government of India (GoI) began a nationwide MDA campaign in 2004, to cover all the known endemic LF districts with an annual single dose of DEC with an aim of eliminating it as a public health problem by the year 2015, as stated in the National Health Policy 2002. DEC tablets are available with health workers or volunteers during MDA who make house to house visits and give tablets. Drug distribution booths are also set up at health facilities and other public places during MDA campaign. These tablets are supplied free of cost. Adult female filaria worm lives in body usually for 5-7 years and produces microfilariae, therefore MDA is implemented for 5 - 7 years.³

In 2007, India changed its strategy from delivery of DEC alone to delivery of DEC plus albendazole. The coverage levels varied from 55% to 90%.⁴ Odisha has reported a fall in

MF rate to 0.77 in 2014 as compared to 2.57 in 2004.⁵ However, an effective surveillance can help fulfil the aim of global elimination of LF as a public health problem.

Boudh district belongs to western region of Odisha having an area of 3098 sq.km and comprises of 1186 villages distributed among 3 blocks and population density of 142 per sq.km. The total population of district was 441162 (as per 2011 census report), out of which 95.37% resided in rural area. Literacy rate of the district was 72.51% as per 2011 census data.⁶

With this background knowledge the study was carried out with the following objectives:

1. To estimate the coverage of MDA in the households in the surveyed districts.
2. To enlist the reasons for non-consumption of the drug.

MATERIALS AND METHODS

Study Period and Place

The survey to know the coverage and acceptance of MDA against filariasis in Boudh district of Odisha was conducted by the Department of Community Medicine, VIMSAR, Burla.

Type of Study- Observational study.

Sampling Method

Rural Area

In the first stage, two blocks from Boudh district, Boudh and Kantamal block were randomly selected and in second stage, two sub-centre areas per block i.e. in Boudh block two sub-centres viz. Baunsuni and Balasingha and from Kantamal block two sub-centres viz. Manamunda and Ratakhandi were randomly selected. In the third stage, five villages per sub-centre area were selected randomly. Within the village ten households were visited randomly and the members available were interviewed. Thus, a total of 200 households from rural area (10 HH/ village * 5 villages/ sub-centre area * 2 sub-centre areas/ block * 2 blocks/ district) were included in the survey.

Urban Area

Boudh town was purposively selected and two wards (ward-1 and ward-8) in the town were selected randomly and from each ward 50 households were visited randomly (50 HH/Ward* 2 Wards). Thus, in total 300 HH were included in the study.

Study Method

The data was collected through a door-to-door survey after defining the area and population under study. A verbal consent was taken from each respondent after explaining the objective of the study. Participants who were unwilling to take part in the study along with the pregnant woman and children below 2 years of age were excluded. The questionnaire prepared contained the particulars of the family and few questions regarding distributions, consumption and reasons for non-consumption of DEC and Albendazole tablets. It included questions relating to source of information regarding MDA. Ten houses were covered, starting from one mark or point of a street or lane in a village of a rural area and in urban area fifty houses were covered in the wards.

Data Entry and Analysis

Data was collected, compiled and analysed using MS Excel.

RESULTS

Table 1 shows the age and sex wise distribution of beneficiaries of 300 interviewed households. Consumption status of a total of 1547 beneficiaries were enquired from Boudh district. 497 beneficiaries from Boudh block, 571 from Kantamal Block and 479 from Boudh urban area were evaluated. Among them nearly 80% were above or equal to 15 years of age group. The males and females were almost equally distributed.

Table 2 depicts that in Kantamal block all (100%) of the beneficiaries < 15 years had received the drugs, whereas in Boudh block (94.7%) and in the urban areas (95.6%) had received the drug in the age group < 15 years. Similarly, as regards receipt of drugs, in ≥ 15 years' age group the beneficiaries were 93%, 99.6% and 97.1% in Boudh, Kantamal and urban areas of Boudh districts respectively. The overall receipt of drugs among the beneficiaries was 96.7% in rural areas and 97.3% in urban areas of Boudh district.

Table 3 shows that in Boudh block the consumption of drugs in both the age group < 15 years and ≥ 15 years, i.e. 84.6% and 88.7% respectively. Similarly, in urban area of Boudh the consumption status was 79.3% in the age group <15 years and 85.3% in the age group > 15 yrs. But in Kantamal block the consumption status was much better, i.e. almost 95% in both the age groups.

Table 4 shows that the number of beneficiaries who consumed drugs in front of drug distributor was very less, i.e. only 25.24% in Boudh, 6.66% in Kantamal and 8.15% in urban areas of Boudh. In < 15 years' age group 15.5% of beneficiaries consumed drugs in front of drug distributor in Boudh as compared to 2.6% and 5.4% in Kantamal and urban areas of Boudh respectively. In ≥ 15 years' age group, the beneficiaries that consumed drugs in front of drug distributor were 27.5%, 7.7% and 8.7% in Boudh, Kantamal and Urban areas of Boudh respectively.

Table 5 depicts rural and urban distribution among beneficiaries. Among the beneficiaries in the rural areas, 96.7% received drugs, 88.8% consumed drugs and 13% consumed drugs in front of drug distributor. In the urban areas 97.3% received drugs, 84.6% consumed drugs and 6.9% consumed drugs in front of drug distributor. Out of a total 1547 beneficiaries in the Boudh district 96.9% beneficiaries received the drugs, 87.5% consumed drugs and 11.11% consumed the drugs in front of the drug distributor.

Table 6 shows that out of 300, 11 (3.6%) households had no information regarding MDA. ASHA were the most common source of information, i.e. in 55.3% of households followed by AWW (40.3 %), ANM (0.3%) and others (0.3%), i.e. radio, TV.

Table 7 describes the most common reason for not consuming drugs in both urban and rural area was due to fear of side effects of the drugs (73.3%) followed by the notion that they are not suffering from LF, so why take drugs (8.9%). 7.5% of them had no information about LF/MDA, 3.4% were away from home so were not able to take the drugs. 6.9% gave some non-specific reasons for not consuming the drugs.

Age	Block I (Boudh)			Block II (Kantamal)			Urban (Boudh)			Total
	Male	Female	Total	Male	Female	Total	Male	Female	Total	
< 15 years	49	47	96	57	64	121	49	41	90	307
≥ 15 years	207	194	401	236	214	450	187	202	389	1240
Total	497			571			479			1547

Table 1. Area-Wise Age and Sex Distribution of Beneficiaries (N= 1547)

Age	Block I (Boudh)		Block II (Kantamal)		Urban (Boudh)	
	Beneficiaries	Received	Beneficiaries	Received	Beneficiaries	Received
< 15 years	96	91 (94.7)	121	121 (100)	90	88 (95.6)
≥ 15 years	401	373 (93.01)	450	448 (99.6)	389	378 (97.1)
Total	497	464 (93.36)	571	569 (99.65)	479	466 (97.28)

Table 2. Number of Beneficiaries who Received Drugs (%)

Age	Block I (Boudh)		Block II (Kantamal)		Urban (Boudh)	
	Received	Consumed	Received	Consumed	Received	Consumed
< 15 years	91	77 (84.6%)	121	114 (94.2%)	90	73 (79.3%)
≥ 15 years	373	331 (88.7%)	448	426 (95.08%)	389	332 (85.34%)
Total	464	408 (87.93%)	569	540 (94.9%)	479	405 (84.55%)

Table 3. Number of Beneficiaries who Consumed Drugs (%)

Age	Block I (Boudh)		Block II (Kantamal)		Urban (Boudh)	
	Consumed	In Front of DD	Consumed	In Front of DD	Consumed	In Front of DD
< 15 years	77	12 (15.5%)	114	03 (2.6%)	73	04 (5.4%)
≥ 15 years	331	91 (27.5%)	426	33 (7.7%)	332	29 (8.7%)
Total	408	103 (25.24%)	540	36 (6.66%)	405	33 (8.15%)

Table 4. Number of Beneficiaries who Consumed Drugs in Front of Drug Distributor (%)

Residence	Drug Received	Drug Consumed	Consumed Drugs In Front of DD
Rural (N=1068)	1033 (96.7)	948 (88.8)	139 (13)
Urban (N=479)	466 (97.3)	405 (84.6)	33 (6.9)
Total (N=1547)	1499 (96.9)	1353 (87.5)	172 (11.11)

Table 5. Beneficiaries with Rural-Urban Distribution (%)

Residence	ANM	AWW	ASHA	OTHERS	NO INFO
Rural	1	32	185	1	7
Urban	0	89	07	0	4
Total	1 (0.3%)	121 (40.3%)	166 (55.3%)	1 (0.3%)	11 (3.6%)

Table 6. Source of Information (n= 300, HH) (%)

Reasons	Fear of Side Effects of Drugs	Not Suffering from LF, so why take Drugs	No Info about LF/MDA/ DEC	Away from Home so did not take Drugs	Other Non-Specific Reasons	Total
Rural	60 (70.6%)	13 (15.3%)	8 (9.4%)	4 (4.7%)	0 (0%)	85
Urban	47 (77.04%)	0 (0%)	3 (4.9%)	1 (1.6%)	10 (16.4%)	61
Total	107 (73.3%)	13 (8.9%)	11 (7.5%)	5 (3.4%)	10 (6.9%)	146

Table 7. Reasons for Not Consuming Drugs after Receiving the Drugs (%)

DISCUSSION

In a study conducted in Sagar and Damoh districts of Madhya Pradesh, the coverage rate was 96.2% and 84% respectively with a total coverage rate of 90.90% which is lower compared to this study (96.9%). A total compliance rate in both the districts was 66.66%. The compliance rate in Sagar district was 85.52% and was only 42.82% in Damoh, which were very low in comparison to our study (87.4%). The most common reason for not consuming the drug was drug given at home, but drug distributor did not ask to take the drug in front of him/ her in 50% cases. In our study though majority of the beneficiaries (89%) did not consume the drug in front of the drug distributor, they consumed the drugs of their own.⁷

In another study conducted in a study population of 1228 in Karnataka state, the compliance rate was 78.6% in

Bagalkot district and 38.8% in Gulbarga districts which are very low figures in terms of our study findings.⁸

A study done in West Bengal with total eligible population of 683, among which 98.8% received the drugs which is as par as our study (96.9%). About 5% of the recipients did not consume the drugs compared to nearly 10% recipients in our study. The drug compliance rate was significantly lower in urban (90.7%) than in the rural areas (95.7%) compared to 88.8% and 84.6% respectively in our study.⁹

In another study done in Puri district, Odisha nearly 99% of the studied individuals in both rural and urban areas received DEC and Albendazole during the MDA campaign. However, only 28% in rural areas and 31% in urban areas had consumed the distributed drugs. These findings were quite lower compared to our study.¹⁰

CONCLUSION

- The total number of household members surveyed was 1636, out of which total number of beneficiaries were 1547 (94.6%).
- Among the beneficiaries 80% were ≥ 15 years and above, while 20% were < 15 years.
- Females constituted 49% and males 51%.
- Among 1547 beneficiaries in the surveyed population, 1499 (96.9%) had received drugs during MDA.
- Out of the beneficiaries, 1353 (87.45%) had consumed drugs.
- Out of the beneficiaries who consumed drugs, 172 (11.12%) had consumed drugs in front of drug distributor.
- The overall drug consumption rate in Boudh district was found to be 87.4% among the beneficiaries (87.9% in Boudh block, 94.9% in Kantamal block and 85.3% in Boudh Urban).
- Among the beneficiaries in the rural areas, 96.7% received drugs, 88.8% consumed drugs and 13% consumed drugs in front of drug distributor.
- In the urban areas 97.3% received drugs, 84.6% consumed drugs and 6.9% consumed drugs in front of drug distributor.

Recommendation

- Social mobilisation activities on importance of filariasis and role of MDA should be carried out in the community. The use of posters, banners and mass media should be utilised for better coverage of MDA in the district.
- Supervision and monitoring of MDA activities will help not only in boosting the activities of the grass root level health workers, but will also decrease the apprehensions of the community regarding the drugs and their side effects.
- A process evaluation of MDA should be conducted. This includes in-depth interviews among utilisers and non-utilisers, the service providers and the planners of the program both at block and district level. Focus group discussion should also be done among different state holders of the program. This evaluation can reveal the factual position of MDA, so that appropriate steps can be taken for improving the coverage of the program.

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NVBDCP cell, Odisha.

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