

Rural and Urban Differences in MDA Coverage for Filariasis in Jharsuguda District of Odisha

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ABSTRACT

Background: Filariasis is the common term for a group of diseases caused by parasitic nematodes belonging to super family Filarioidea. Filariasis caused by nematodes that live in the human lymph system is called Lymphatic Filariasis (LF). The infection is prevalent in both urban and rural areas.

Objectives: 1) To assess the coverage of Mass Drug Administration (MDA) for Filariasis (2) To find out the rural and urban difference of MDA coverage

Methods: The study was undertaken as a Post MDA survey with prospective data collection in district of Jharsuguda. The information was collected using a questionnaire developed and based on NVBDCP guidelines. Two rural blocks and two wards of urban area surveyed during February 2016 were selected for this study.

Results: The coverage of MDA in rural area found to be more than urban area. The most common reason for not taking drug in rural area was beneficiary absent at home during drug distribution, where as in urban area the reason was no information about MDA. The percentage of population consuming drugs during MDA was more in rural area than urban area.

Conclusion: The coverage in rural areas is more than urban areas. This requires the use of mass media such as local TV channels, newspapers, posters and banners at public places for increasing the awareness and coverage of MDA in the urban areas.

Keywords: Lymphatic Filariasis, MDA, NVBDCP.

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INTRODUCTION

Lymphatic Filariasis is the world's second leading cause of long-term disability. It causes debility and imposes severe social and economic burden on the affected individuals, their families and communities. The current estimate reveals that 120 million people in 83 countries of the world are infected with lymphatic filarial parasites and it is estimated that more than 1.1 billion (20% of the world's population) are at risk of acquiring infection. Over 40million people are severely disfigured and disabled by filariasis and 76 million are apparently normal but have hidden internal damage to lymphatic and renal systems.¹

According to the World Health Organization, India, Indonesia, Nigeria and Bangladesh alone contribute about 70% of the infection worldwide.² It has been estimated that approximately 5 million Disability Adjusted Life Years (DALYs) are lost annually, ranking third among the Tropical Disease Research (TDR) diseases in terms of DALYs after malaria and TB.

Lymphatic filariasis is a major impediment to socioeconomic development and also a major cause and effect of poverty. The discovery of microfilaria (mf) in the peripheral blood was made first by Lewis in 1872 in Kolkata City.¹

Indigenous Lymphatic Filariasis cases are reported from 20 States/UTs namely Andhra Pradesh, Assam, Bihar, Chhattisgarh, Goa, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal, Pondicherry, Andaman & Nicobar Islands, Daman & Diu, Lakshadweep and Dadra & Nagar Haveli. From these States/UTs, a total of 250 districts have been identified to be endemic for filariasis with a population of about 600 million at risk.³ Morbidity surveys (up to 2012) of filarial cases in the states/UTs revealed 8 lacs cases of lymphedema and 4 lacs cases of hydrocele.³ The microfilaria survey reports received from 205 districts revealed microfilaria rate of about 0.45%.⁴ Nearly 2.5 crore population of Odisha living in 20 endemic districts are at risk with 5 to 10 per

cent of them suffering from various manifestations of the disease. As per available data, 79,912 persons in the State are recorded to be suffering from lymphedema and 37,085 from hydrocele.³ WHO launched its Global Programme to Eliminate Lymphatic Filariasis (GPELF) in 2000 with the aim of eliminating the disease as a public health problem. In 2012, the WHO NTD Roadmap reconfirmed the target date for achieving elimination as 2020.⁴ The Government of India is signatory to the World Health Assembly Resolution in 1997 for Global Elimination of Lymphatic Filariasis. The National Health Policy (2002) envisages elimination of lymphatic filariasis in India by 2015. Annual Mass Drug Administration (MDA) of single dose of DEC (Diethylcarbamazine citrate) and Albendazole for 5 years or more to the eligible population (except pregnant women, children below 2 years of age and seriously ill persons) to interrupt transmission of the disease. Home based management of lymphedema cases and up-scaling of hydrocele operations in identified CHCs/ District hospitals /medical colleges. DEC tablets are available with health workers or volunteers during MDA who make house to house visits and give tablets. Drug distribution booth is also set up at health facilities and other public places during MDA campaign. These tablets are supplied free. Adult female filaria worm lives in body usually for 5-7 years & produce microfilaria, therefore the MDA is implemented for 5-7 years. The transmission can be eliminated after 5 to 7 round of MDA covering a minimum of 85% population. MDA is being implemented in India since year 2004. In 2007 India changed its strategy from delivery of DEC alone to delivery of DEC plus Albendazole; the number of people treated with combinations has increased steadily. India has reduced the prevalence to less than 1% in 192 out of 250 districts. In implementation units in Nalgonda in Andhra Pradesh, the prevalence of microfilaria was reduced from 17% (2004) to 0.8% in 2009.⁴ Odisha has reported an MF rate of 0.43 in 2011 compared to 2.57 in 2004. However, coastal districts are more

endemic for the disease, particularly the district Puri. MDA assessment is being held in Odisha every year since 2004. Till 2014 coverage was more than 85%, except for 2012 when the survey was not done.⁵ With this background the study was conducted in Jharsuguda district to determine the coverage of Mass Drug Administration (MDA) for Filariasis and to find out the rural and urban difference of MDA coverage.

METHODS

The assessment of post-MDA activity of Jharsuguda district for 2015 was carried out by the Department of Community Medicine, VSS Medical College, Burla in February 2016. Of total five blocks, two blocks viz. Kolabira & Lakhanpur for rural coverage and 2 wards viz. ward no 14 and 16 from Jharsuguda town were randomly selected for urban coverage of MDA for Jharsuguda district. From each block, two sub centers were selected randomly, and from each sub-centre five villages were selected. The survey started with a visit to the block CHC where a rough map was prepared to visit the respective villages in the two blocks. In each village ten households were selected randomly for data collection. In total 300 households were surveyed of which 200 from rural area and 100 from urban area. The data were collected from each household on the day of the survey in the pre-designed format for data collection. From each household an adult respondent was sought among those present at the time of the survey. Informed verbal consent was taken from the respondent following introduction and information regarding the purpose of the survey. Detailed data were collected in the prescribed format during the interview. Following data collection, all the data were aggregated and then entered in Microsoft Excel. Data analysis was done in the Department of Community Medicine, VSS Medical College, Burla for report generation. Pregnant women, children below 2 years of age and seriously ill persons were excluded from study as per guidelines.

Fig 1: Flowchart for MDA Assessment

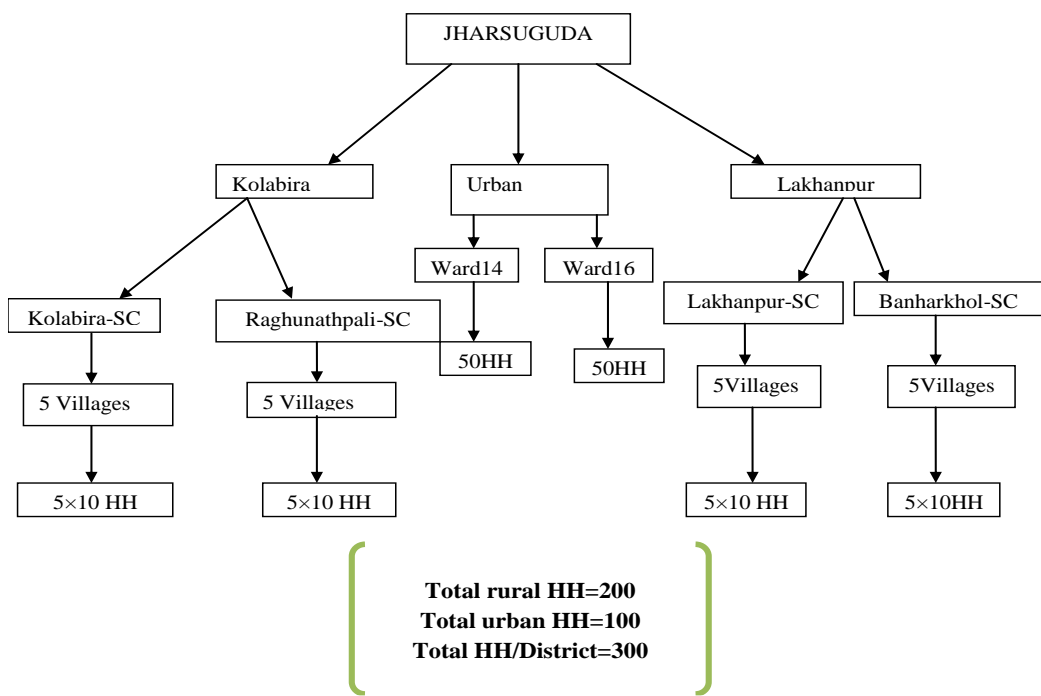


Table 1: Area-wise Age & Sex distribution (N= 1537)

Age	Rural			Urban			Total
	Male	Female	Total	Male	Female	Total	
< 15 years	113	107	220	49	58	107	327
≥ 15 years	446	426	872	144	194	338	1210
Total	559	533	1092	193	252	445	1537

Table 2: Number of beneficiaries who received and consumed drugs in front of Drug Distributors (%)

Age	Rural				Urban			
	Beneficiaries	Received	Consumed	Consumed in front of Drug Distributor	Beneficiaries	Received	Consumed	Consumed in front of Drug Distributor
< 15 years	220	214	204	81	107	84	76	2
≥ 15 years	872	852	836	284	338	288	269	4
Total	1092	1066 (97.61%)	1040 (97.56%)	365 (35.09%)	445	372 (83.59%)	345 (92.74%)	6 (1.73%)

RESULTS

The mass drug administration survey for Jharsuguda was carried out in February 2016. The total number of households surveyed was 300. Two blocks viz. Lakhanpur and Kolabira; and urban area of Jharsuguda (Ward no. 14 and 16) were included in the survey. The total number of household members surveyed was 1627, out of which total number of beneficiaries were 1537 (94.47%). Of total beneficiaries, 1092 (71.04%) from rural area and 445 (28.96%) belong to urban area. The 5.53% members not eligible to be beneficiaries included; children < 2 years age (45.21%), pregnant women (12.12 %), and diseased or seriously ill (42.67%). In Rural areas the number of males and females were more than those in urban areas in both < 15 years and ≥ 15 years age group. The no of beneficiaries received and consumed drugs more in rural areas than urban areas in both < 15 years and ≥ 15 years age group. In rural areas 97.61 % beneficiaries received drugs compared to 83.59 % in urban areas. Similarly in rural areas 97.56 % consumed drugs as compared to 92.74 % in urban areas.

Around 35.09 % consumed drugs in front of Drug Distributor (DD) in rural areas as compared to 1.73 % in urban areas.

Out of a total 1537 beneficiaries, 6.44 % did not receive drugs. Similarly of the 1438 beneficiaries who received drugs, 3.68% of beneficiaries did not consume drugs. And 73.21 % of the 1385 beneficiaries who consumed drugs did not consume the drugs in front of the Drug Distributor (DD). The differences in receipt and consumption of drugs in the rural and urban areas was found to be significant (p<0.05) indicating better coverage in the rural area. The most common reason for not consuming drug in rural areas was that the beneficiaries were absent from home (48.4%) and in urban areas the most common cause was “no information” (33.3%). Out of 300, 35 (11.66 %) households had no information regarding MDA. AWW were the source of information in 60.33 % of households, followed by ASHA (57 %). Side effects due to drugs were present in 1.05 % of rural beneficiaries and 0.28 % of urban beneficiaries. Most of the side effects were mild and did not require any treatment.

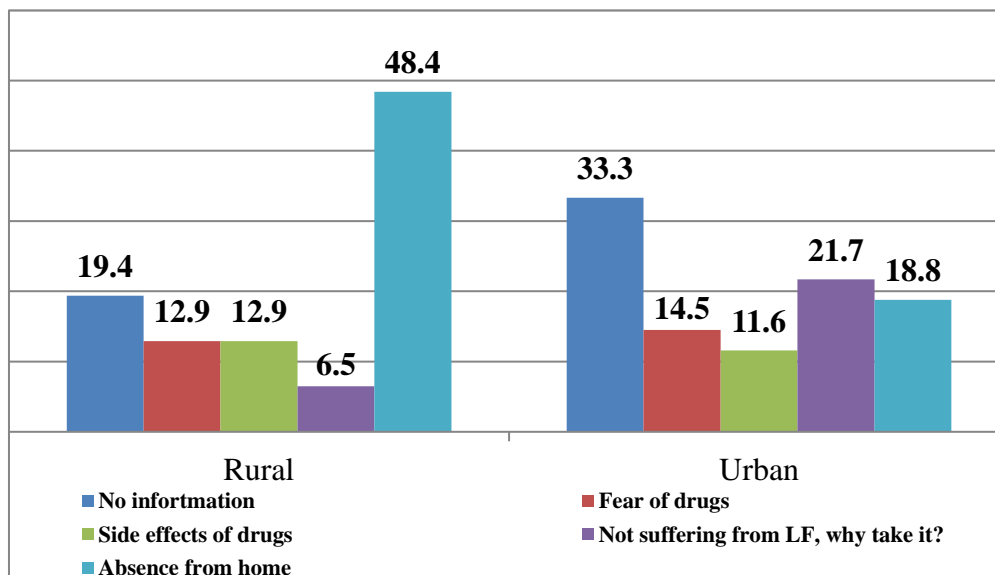


Fig 2: Reasons for not consuming drugs (Figures in %)

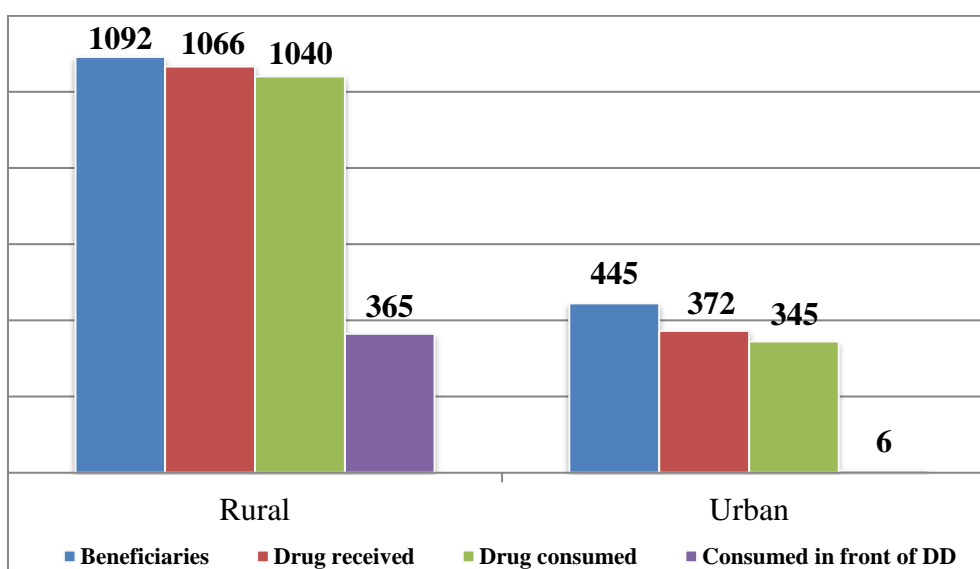


Fig 3: Rural-Urban distribution of beneficiaries (%)

Table 3: Beneficiaries with Rural-Urban distribution (%)

Residence	Drug received N= 1537		Total	Drug Consumed N=1438		Total	Consumed Drugs In front Of DD N=1385		Total
	Yes	No		Yes	No		Yes	No	
Rural	1066 (97.61)	26 (2.38)	1092 (100)	1040 (97.56)	26 (2.43)	1066 (100)	365 (35.09)	675 (64.90)	1040 (100)
Urban	372 (83.59)	73 (16.40)	445 (100)	345 (92.74)	27 (7.25)	372 (100)	6 (1.73)	339 (98.26)	345 (100)
Total	1438 (93.55)	99 (6.44)		1385 (96.31)	53 (3.68)		371 (26.78)	1014 (73.21)	

Table 4: Source of information (n=300 HH) (%)

Residence	ANM	AWW	ASHA	Radio	TV
Rural	31	142	108	11	3
Urban	2	39	63	2	0
Total	33 (11)	181 (60.33)	171 (57)	13 (4.33)	3 (1)

Table 5: Side effects of MDA (%)

Side effects	Rural	Urban	Total
Present	11 (1.05)	1 (0.28)	12 (0.86)
Absent	1029 (98.94)	344 (99.71)	1373 (99.13)
Total	1040 (100)	345 (100)	1385 (100)

DISCUSSION

The assessment of post-MDA activity of Jharsuguda district was carried out by the Department of Community Medicine, VSS Medical College, Burla. In our study, coverage in rural areas was 97.61% as compared to 83.59% in urban areas. In study by Kumar et.al the coverage was 85.2% in Gujarat & the effective coverage was marginally better in rural areas than urban areas.⁶ In B V Babu study in Orissa, the coverage was 67%.⁷ The assessed coverage of distribution as per ICMR study was significantly higher in rural areas (65-73%) of Tamil Nadu compared to urban areas (40-45%).⁸ In Kerala these figures were

72-82% in rural areas and 67-85% in urban areas respectively.⁸ In a study done in Surat, coverage was slightly better rural than urban.⁹ Karmakar P Ray et al also reported higher coverage and compliance rate(72.87% & 70.47%) in rural area as compared to urban areas (14.22% & 56.25%).¹⁰ According to a study by Nirgude et al in Nalgonda district of Andhra Pradesh found that coverage in rural area was 71.8-96.8% and 75.9% in urban area.¹¹ The higher coverage in rural areas than urban areas might be due to the fact that the DDs must be familiar with the people in the rural areas. Persons missed by the team and person not

available at home were major reasons for non-coverage as the house to house visit by DDs was carried out during the office hours i.e. 9 am to 5 pm so the person might not be at home during this period. While in urban areas there were a proportion of households in spite of being visited were not given drug was negligence on the part of the DDs. In our study the most common reason for noncompliance in rural areas was absent from home (48.4%) and “no information” (33.3%) in urban areas. In a study done in Karnataka, 55% non-compliant population said they were not at home during MDA activity.¹² In our study 12.9 % in rural & 11.6% in urban area did not consume drug due to fear of side effects. In a study done in Karnataka, 19% did not consume the drug because of fear of side effects.¹² In a study done in West Bengal, fear of side-effects was the main reason for non-compliance.¹³

CONCLUSION AND RECOMMENDATIONS

The coverage in rural areas is more than urban areas. This requires the use of mass media such as local TV channels, newspapers, posters and banners at public places for increasing the awareness and coverage of MDA in the urban areas. Consumption of drugs in front of drug distributor is very low. The local health authorities should emphasize on the grass root level health providers for ensuring the consumption of MDA drugs in front of the drug distributors. This will not only increase the confidence among the community regarding intake of MDA drugs but also ensure a better coverage. Supervision of MDA activities by the local health authorities is essential to allay the fears of side effects of MDA drugs by the community thereby enhancing the coverage of MDA.

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