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Impact of social awareness and Government programmes on the scenario of *Wuchereria* infection over last decade in Murshidabad, West Bengal, India

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Abstract:
Lymphatic filariasis is very common in most of the rural areas as well as urban slums in India. An alarming rise was noted in filariasis during the fourth and fifth decade of twentieth century. Indian government raised a flagship programme in 1955 to eradicate the LF through mass drug administration. Some other central and state government initiatives were also aimed at elevating social awareness towards cleanliness during last decade. Present study is designed to find out the change of scenario of *Wuchereria* infection in last ten years in the Murshidabad district of West Bengal, India, and to check the impact of social awareness programmes on this scenario.

Keywords: Lymphatic filariasis, Mass drug administration, Murshidabad, Awareness.

1. INTRODUCTION:

Wuchereria infection has a long history worldwide since decades; and India has a history as old as 6th century, where we found a description of this infection in one of the oldest medical journals called 'Susruta Samhita' written by ancient medical expert Susruta. Since then, *Wuchereria* infection creating long term disability among the population of the country by causing Lymphatic Filariasis (LF). *Wuchereria bancrofti* is the primary cause (99.4%) of Lymphatic Filariasis in India, a widespread parasitic disease affecting millions, transmitted by *Culex* mosquitoes, causing chronic conditions like elephantiasis and severe disability, with India bearing a significant global burden and actively working on elimination through mass drug administration (MDA) programs targeting widespread *W. bancrofti* and localized *Brugia malayi* infections.

India had undertaken a programme in 1955 named as National Filaria Control Programme (NFCP); the aim of the programme was to eliminate the LF by implementing MDA (Mass Drug Administration) programme. Inspite of the programme India has a high rate in LF, in terms of statistics India has currently 257 districts all over the India containing 650 million population. Among these states West Bengal standing in top row with 12 districts (24-Parganas North, 24-Parganas South, Bankura, Bardwan, Birbhum, Cooch-Behar, Malda, Medinipur East, Medinipur West, Murshidabad, Nadia, Purulia) who have endemicity of LF. The data on LF of various districts in West Bengal are well documented, nevertheless the data of the Murshidabad district has a scanty in data collection whereas the district is endemic. This current study would represent the current scenario of *Wuchereria* infection among the people of Murshidabad district and could help to draw the successive steps of NFCP.

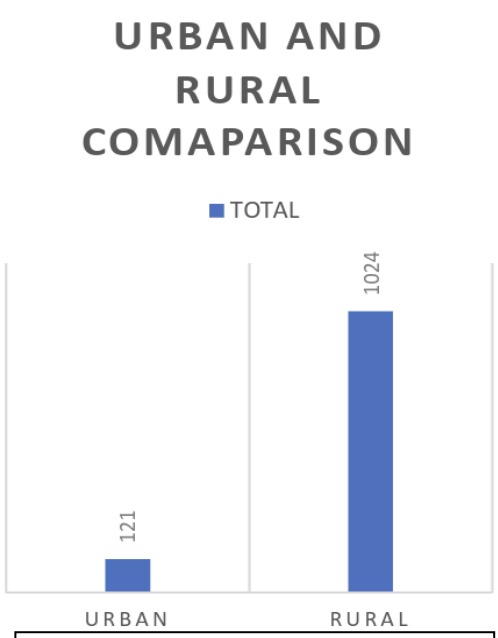
2. MATERIALS AND METHODS:

Questionnaires were prepared for the sample survey to be conducted in rural and urban areas of Murshidabad, West Bengal, India. A detailed data collection has been done for the structure formation of the present study. The area which were selected for the data collection are the 26 blocks (Berhampore, Beldanga-1, Beldanga-2, Hariharpara, Nowda, Kandi, Khargram, Burwan, Bharatpur-1, Bharatpur-2, Farakka, Shamserganj, Suti-1, Suti-2, Raghunathganj-1, Raghunathganj-2, Sagardighi, Nabagram, Bhagwangola-1, Bhagwangola-2, Msd-Jiaganj, Lalgola, Domkal, Jalangi, Raninagar-1, Raninagar-2) and 8 municipal areas (Berhampore, Kandi, Dhuliyan, Jangipur, Jiaganj-Azimganj, Murshidabad, Domkal). After collecting the data samples from different parts of the Murshidabad district of West Bengal, India, they were analyzed with suitable statistical methods to examine the significance of deviation, and available data were represented graphically to get the comparative overview.

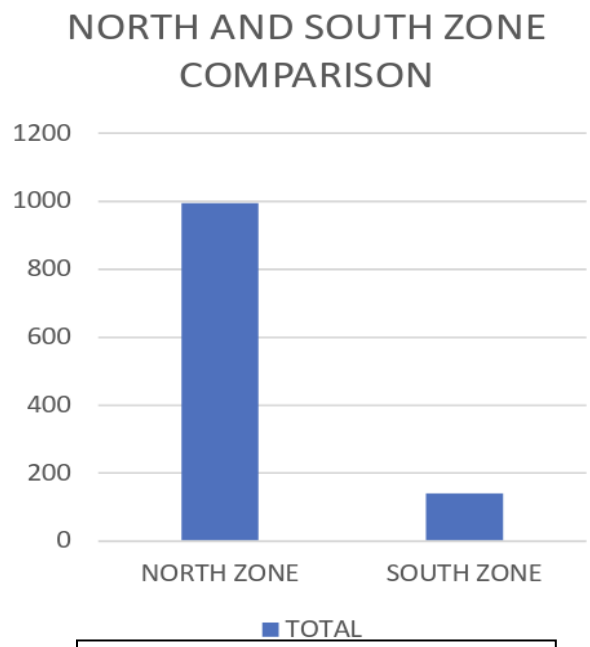
3. FINDINGS:

While comparing present scenario of the *Wuchereria* infection in rural and urban areas (Graph – 1) of Murshidabad, West Bengal, India, it is found that filariasis is much more predominant in rural parts of Murshidabad. Significantly low urban records have been observed for *Wuchereria* infection, as compared to rural data.

Total area of Murshidabad district was divided into two distinct geographic-administrative regions – Northern and Southern. The available data, (Graph – 2) when distributed between these two regions, depicts a significant difference in the trend of *Wuchereria* infection among Northern and southern parts of Murshidabad. Filariasis has been observed to cause notably higher in Northern parts as compared to Southern parts of the district.

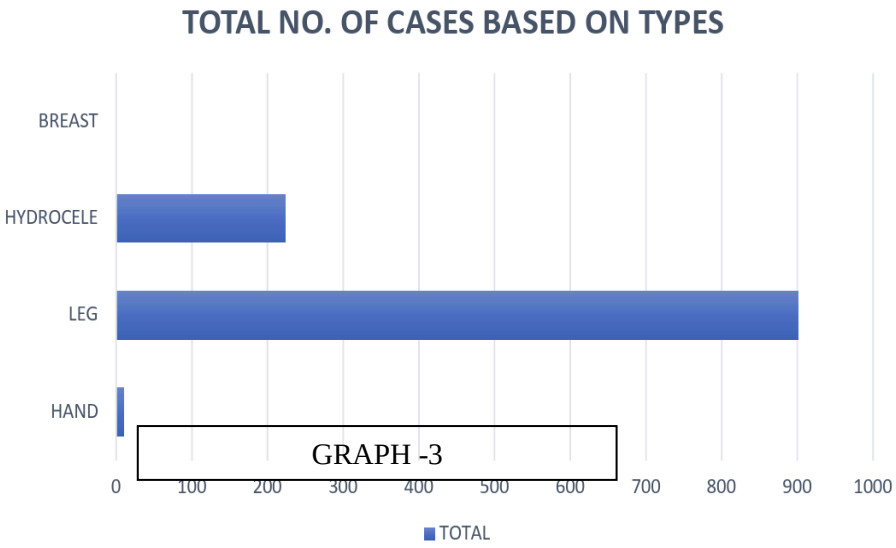


GRAPH -1



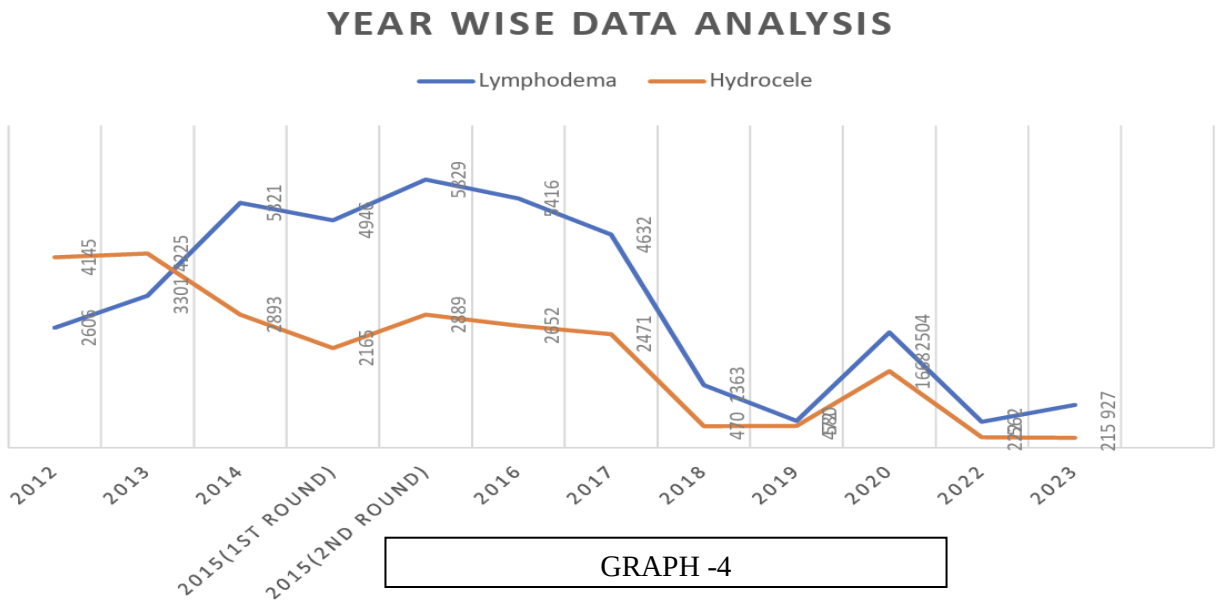
GRAPH -2

Major target organs of filariasis were assessed from the available data samples. It has been observed that filariasis infects mostly the limbs, viz hands and legs, and male gonadal organ. When a comparison was made between present cases of *Wuchereria* infection in hands, legs, hydrocele and female breast, it shows that legs are the prime target for the disease under study. Hands and breast are less vulnerable, whereas hydrocele is moderately affected to this infection as per the data from Murshidabad district is concerned.



GRAPH -3

A cumulative data on *Wuchereria* infection over last decade, obtained from government health departments of Murshidabad district were analyzed critically to examine the trend of infection, and to assess the probable cause behind the trend. It is observed that the disease is significantly declining gradually over last 10 years in Murshidabad. Following graph describes the declining nature of *Wuchereria* infection in this district.



GRAPH -4

4. DISCUSSION:

The current study has been analyzed from different aspect of points. The study zone has been divided into many analytical measures such as 'Urban and Rural', 'North and South zone', 'Cases from the different types of Filariasis' and also from the yearly case registration in hospitals of Murshidabad district in the last decade.

The current study leads to a conclusion that shows LF has been a great troubling disease over a decade. The collected results show that the cases have a high rise among the rural area of the district [as provided by the DOH Murshidabad]. The probable reasons for this difference are due to the unawareness of people and impassiveness of concerned authorities on this disease (Chandra et al., 2013). They are impassive about the cleanliness of their habitat area which later became the reasons for these vector borne diseases. Though the disease has a spreading all over the district but the result shows that northern area of the district got affected the most than the southern zone. The northern zone of this district has a lead in no. of household per sq.km (310.75) than the no. of household per sq.km in southern zone (279.12), which can be a probable cause for the rise of case number in northern zone of the district. [District survey report, 2020]

The current study does not show any special variation in the types of LF as in the study the lymphedema cases is the most by which the people are suffering than the other types of its kind.
This study authenticates that in the last decade the number of cases started to get rise in the starting years of decade to the middle of the decade. The results show a successive regress and downfall in the number of LF in the last few years in the last decade. As the awareness campaigns like 'Swacch Bharat mission', 'Mission Nirmal Bangla' and many other social cleanliness drives ran by the Governments year by year lead the people to keep the areas clean. Which reduces the water accumulation due to rainfall or any other reasons, in the abandoned stuffs in the house premises or in the road. Which reduces the breading area for the vector of this disease.
Another reason behind the successive lowering in the outbreak is due to MDA (Mass Drug Administration) run by the concerned Govt. authorities in the schools and the houses of the area. The government distribute required medication among the population which helps the authorities towards elimination of the LF from the society. The further campaigns and the required treatment can present a better scenario of LF for this district.

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