

**A GEOGRAPHICAL STUDY OF EPIDEMIC DISEASES IN NASHIK
DISTRICT OF MAHARASHTRA WITH SPECIAL REFERENCE TO
DENGUE -A STUDY IN MEDICAL GEOGRAPHY**

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ABSTRACT :

In Nashik district As many as 276 patients with dengue-like symptoms have been found in the city due to lack of cleanliness like useless tiers, tubes, drums, vessels etc. to prevent breeding of mosquitoes. Therefore the number of dengue patients has gone over 100. And the first dengue patient was found in Wadalagaon area this year. The district has recorded eight deaths due to dengue of this year and The Nashik zillaparishad has identified four new cases of dengue for the month of October, taking the total count to 49 positive cases this year. Opinions to the district health department that they are geared to take necessary measures to control the spread of the diseases. More dengue cases have been reported from urban areas, rather than rural areas, in October. And the highest number of cases has been reported in the month of October for this year. "About 66 blood samples were collected from rural areas, of which 19 tested positive. On the other hand, 121 samples were tested from the Nashik Municipal Coporation (NMC) areas, from which 68 turned out to be positive. Contagious diseases are on the rise in monsoon season due to polluted water. When citizens are already suffering from swine flu and malaria, dengue is another addition. It has been found that 69 persons suffered from dengue in last six months Out of this four persons succumbed to the disease. Health of 11,340 citizens was checked at 13 primary health centers in the district. Samples of 119 patients, suffering from the symptoms like cold and fever, were taken. Out of this dengue symptoms were found in 40 patients. It is clear that 69 patients were suffering from dengue. 1 patient each from Walvade, Sonaj and Rawalgaon villages under Malegaon taluka sub-centre and 1 from Kalvan taluka succumbed to the disease.12 patients were found suffering from swine flu in the district. They were advised to take tami flu

tablets. As two patients died from swine flu and one from malaria, citizens are worried. The number of patients suffering from various diseases are increased in private hospitals including district civil hospital. Taking note of this health department has started precautionary measures.

Keywords : Epidemic, Mosquitoes, Dengue

INTRODUCTION :

An epidemic from epi, meaning "upon or above" and demos meaning "people" occurs when new cases of a certain [disease](#), in a given human population, and during a given period, substantially exceed what is expected based on recent experience. Epidemiologists often consider the term [outbreak](#) to be [synonymous](#) to epidemic, but the general public typically perceives outbreaks to be more local and less serious than epidemics. This infectious disease are generally caused by a change in the ecology of the host population. A genetic change in the parasite population or the introduction of a new parasite to a host population. Generally, an epidemic occurs when host immunity to a parasite population is suddenly reduced below that found in the endemic equilibrium and the transmission threshold is exceeded. Influenza, Smallpox, Measles, Cholera, HIV/AIDS, Dengue fever, Chikungunya Hepatitis, Mumps, Typhoid, Tuberculosis, Throat infection, these diseases are called as epidemics. Severe climatic changes responsible for these diseases hence the destruction of human being and wealth. After 1999 in India the scientific study of epidemics was done through The National Institute of Epidemiology.

Dengue Fever:

Dengue fever is a disease caused by viruses that are transmitted by mosquitoes. It is an acute sudden illness followed by a benign course with symptoms such as headache, fever, exhaustion, severe muscle and joint pain, swollen gland and rash. Other signs of dengue fever include Petechiae (small red or purple blisters under the skin), bleeding gums, severe pain behind the eyes, and red palms and soles. Dengue hemorrhagic fever is a more severe form of the viral illness.

NEED AND IMPORTANCE OF THE STUDY AREA:-

“Prevention is better than cure.” This may seem a ridiculous question. Dengue is a serious disease spread through mosquito bites. The World Health Organization reports that approximately 50 million people are infected with dengue, although some researchers estimate that this number could be as high as 100 million. Typically, dengue causes a severe flu-like illness with high fever, headache, and severe body and joint pains. Most patients recover from dengue infections.

A more dangerous form of dengue infection, however, called severe dengue, hospitalizes an estimated 500,000 people most of them children every year. In some regions of the world, severe dengue is fatal for more than 5% of patients. An estimated 2.5 billion to 3 billion people around the

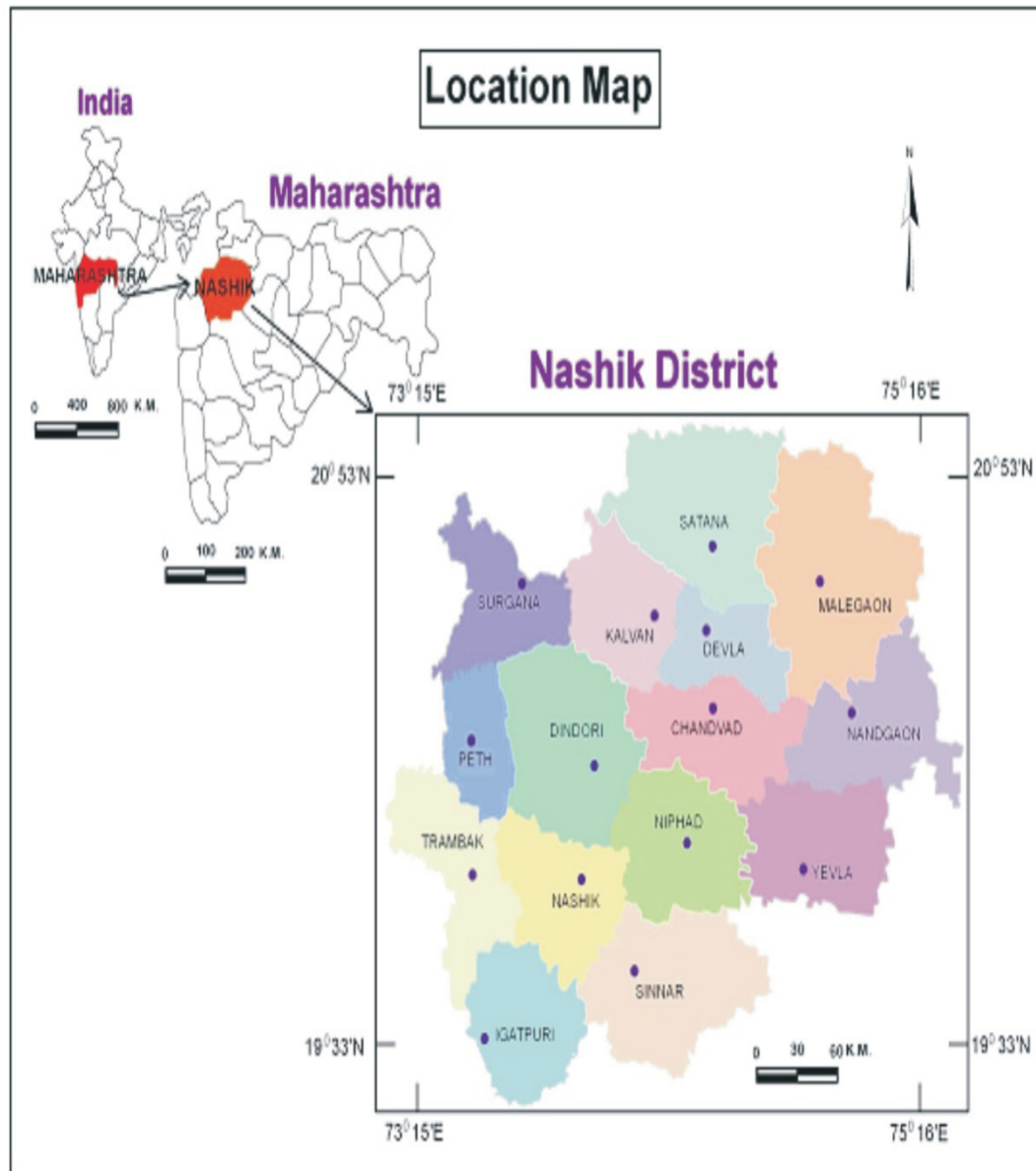
world are currently at risk of dengue infections, and most of these people live in tropical, urban regions of Southeast Asia, the Americas, Africa, and the Pacific. Dengue viruses cause a variable spectrum of disease that ranges from an undifferentiated fever to dengue fever to the potentially fatal dengue shock syndrome. Due to the increased incidence and geographical distribution of dengue in the last 50 years, dengue is becoming increasingly recognized as one of the world's major infectious diseases. This article will review clinical and diagnostic aspects of dengue virus infections. It also presents our current knowledge of the pathophysiology of severe dengue and addresses the importance of dengue virus infections in those travelling to parts of the world where dengue is endemic.

STUDY AREA:-

The Nashik of Maharashtra state has been selected for the research paper. Nashik is one of the important districts of Maharashtra, situated in the partly upper Godavari basin and located between 18° 33' and 20° 53' North Latitude and between 73° 16' and 75° 16' East Longitude at Northwest part of the Maharashtra State, at 565 meters above mean sea level. Nashik is also known as Mini Maharashtra, because the climate and soil conditions of Surnga, Peth, Igatpuri resembles with Konkan, Niphad, Sinnar, Dindori, Baglan blocks are like Western Maharashtra and Yeola, Nandgaon & Chandwad blocks are like Vidarbha Region. Nashik became full-fledged district in 1869. At that time there were 13 talukas but Government has announced two more talukas on 26th June 1999 (Deola and Trimbakeshwar). At present 15 talukas are representing district. Malegaon taluka is the largest in area in the district, occupying 12 percent area of the district, whereas Peth is the smallest taluka having 3.36 percent area followed by Deola having 3.8 percent area; remaining talukas having on an average 5 to 9 percent area of total district. A Nashik district has an area of 15530 sq.km. Nashik had population of 6109052 of which male and female were 3164261 and 2944791 as per the 2011 census. In 2011 density of Nashik district was 393. And total villages are 1931. The location of the study area is showed in the map. Many important rivers of Maharashtra originate in the district. Godavari which is popularly known as Ganga of South India originates at holy place Trimbakeshwar. Another major river is Girna. Other rivers are Darna, Mosam, Aram, Vaitarna, Manyad and Kadwa. Though average rainfall of the district is between 2600 and 3000 mm, there is wide variation in the rainfall received at various blocks. The maximum temperature in summer is 42.5 degree centigrade and minimum temperature in winter is less than 5.0 degree centigrade. Relative humidity ranges from 43% to 62%. Climate of the Nashik is generally compares with that of Bangalore and Pune because of its pleasant nature. However in recent years it is noticed that the temperature is increasing and the rainfall is decreasing due to industrialization and fast deforestation.

In the year 2001-02 the district has public aided 60 hospitals, 113 dispensaries, 134 delivery

centers and 103 primary health centers. In all these 5600 total beds were available Total doctors working were 657 and they admitted 1.60 lacks patients and other medicated patients were 20.54 lacks.



STATEMENT OF THE PROBLEM:-

A statement of problem is the geographical spatial pattern of Dengue diseases in an area depends upon the host-parasite-vector interaction in that area. Hence, it is local problem like topographical conditions, vegetations, distribution of water bodies, drainage network, slums and climatic conditions giving scope to the mosquito breeding

AIMS & OBJECTIVES:-

- To identify the existing knowledge related to Dengue and their vector.
- To identify areas with frequent occurrence of Dengue in this study area.
- To suggest ways and means to reduce frequency of Dengue

HYPOTHESIS:-

- Climatic conditions are responsible to Dengue
- People may have inadequate knowledge of prevention of Dengue.

DATABASE & METHODOLOGY:-

The methodology of present research paper will includes the various steps as follows

LITERATURE SURVEY:-

The literature available on the present research paper form of books, journals, manuals, medical bulletin etc. will be collected by visiting libraries of various colleges. Information is also screened from various news papers, and research papers. And Internet is also used continuously during the tenure of the work to obtain information. This variety of literature will help to decide plan of action for the present research paper.

Sources of data: -

The data collection will be carried out in two phases, which involve primary and secondary data.

i) Primary data:-

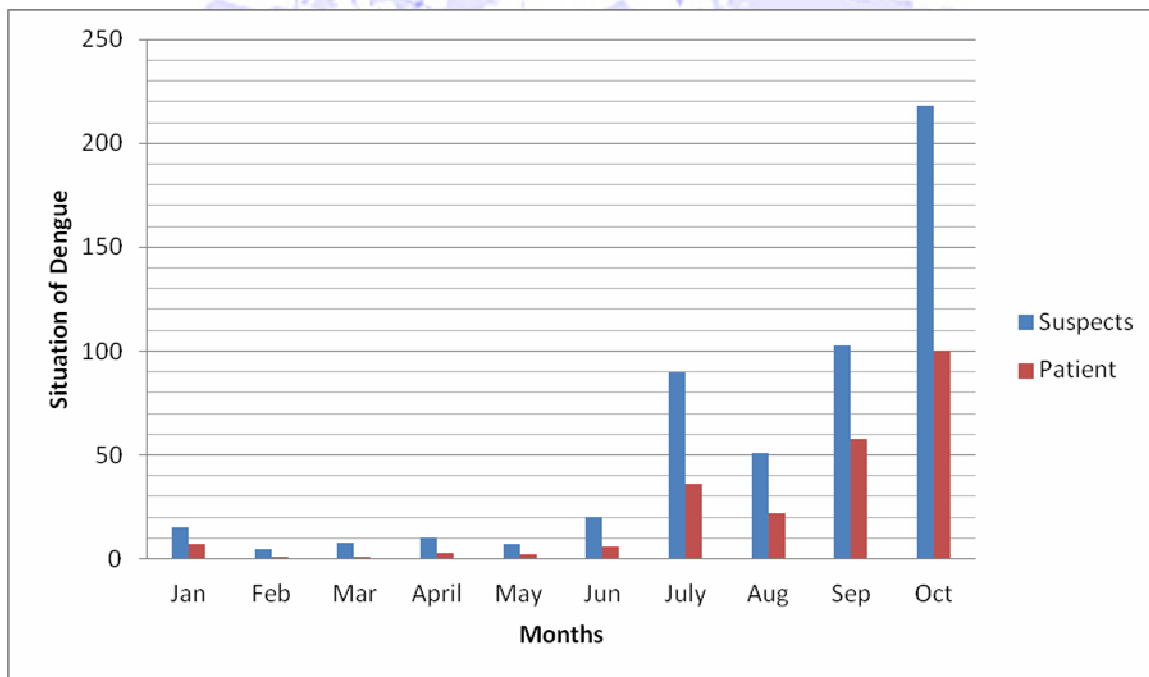
For the collection of data regarding the Dengue various methods will be adopted. The researcher will visit some government and private Hospitals continuously to know the information from hospitals staff and patients through the dialogues and interviews.

ii) Secondary data:-

The secondary data will be collected through health department, medical bulletins, medical research papers, district census handbook, district Gazetteer, cutting of news papers, periodicals, journals research papers, medical books, etc.

Situation of Dengue in Study area

Month	Suspects	Patient
January	15	07
February	05	01
March	08	01
April	10	03
May	07	02
June	20	06
July	90	36
August	51	22
September	103	58
October	218	100



Situation of Dengue in Nashik district overview:

From January to October, 86 positive cases were registered in the NMC jurisdiction. A total of 88 cases across the district have been tested positive for October."While four deaths were recorded in the rural parts of Nashik, the rest were in the urban areas, with the Nashik Municipal Corporation (NMC) accounting for them. It may be recalled that the Malegaon Municipal Corporation (MMC), which had recorded six deaths due to dengue last year, has not recorded any case this year so far, The number of dengue deaths in the district, which was eight in October last year, touched 11 by the year-end. "All necessary measures have been undertaken to ensure that

the [spread](#) of the disease in contained and the health and medical workers have been asked to be vigilant against any outbreak registered in their areas," In rural areas, statistics show that Niphad and Nandgaon talukas have registered two deaths each. According to officials, 828 serum samples of suspects were collected throughout the district so far, of which, 309 turned out to be positive and treatment was given to them.

The official further pointed out that the MMC, which had reported six cases of dengue by October 2012, has reported no outbreak this year so far. "The situation in Malegaon had grown panicky last year, with most of the patients from the rural areas that came to the city for treatment being diagnosed with dengue. Among them, six died - some of them from areas adjoining Malegaon. However, the extensive awareness campaign carried out in Malegaon by way of distributing pamphlets and with the aid of clerics and influential people helped the administration tide over the possible outbreaks of the disease.

The DMO, however, announced the outbreak of dengue in the district with as many as 14 cases detected, including four in the city."Outbreak is announced by the office, either when the number of patients which has been tested positive is more than the population or in cases where there has been a death of the patient suffering from the disease. There were six more locations where the outbreak has been announced, even when there was no death reported," the official said, adding that the protocols of all the measures required to arrest the spread of the disease are being followed of the 15 talukas in the district, outbreaks were announced in Dindori, Niphad, Nandgaon, Peth, Sinnar, Nashik, Satana, Igatpuri and Yeola, with Dindori, Peth and Igatpuri being the tribal talukas.

Conclusions and Suggestions:

Dengue is spreading due to construction sites, stored water and water in flower pots. Mosquito lays eggs around the clean water storage. These eggs can remain live in damp areas for many months. Mosquitoes breed through these eggs. These eggs have cannot be destroyed by the spray of any insecticide. "These findings indicate that during the epidemic and non-epidemic years, dengue infections are mostly seen in post-monsoon season. Hence, preventive measures should be followed at the very onset of monsoon,"

The only measure to prevent this avoid accumulation of water at any place People should maintain their coolers, air conditioner drains, basements, elevator shafts, water storage tanks and drums mosquito free. No amount of fogging outside is going to affect the mosquitoes breeding

inside the house. People need to safeguard themselves against mosquitoes and also compulsory dry day for all survey of reasons leading to the spread of dengue Releasing medicines in water storage tanks to kill dengue worms. Providing free treatment to dengue patients through health centers

References:-

- 1) Introduction to Medical Geography Dr. S. K. Shelar. Chandralok Prakashan Kanpur. India
- 2) Geography and health a Study in Medical Geography Nilofar Izhar. A.P.H Publishing Corporation. New Delhi
- 3) Article based on data provide by Union Health Ministry [cited 2013 May 05] Available from <http://articles.timesofindia.Indiatimes.com/2013-02-28/in India 373510711 Swine-flu-deaths-highest-number>.
- 4) Nashik district gazetteer-2011.
- 5) Swine influenza and Malaria and Dengue – from Wikipedia.
- 6) Census of India 2011
- 7) Nashik district hand book 2011
- 8) Kabra SK, Verma IC, Arora NK, Jain Y, Kalra V. Dengue haemorrhagic fever in children in Delhi. Bull World Health Organ 1992; 70: 105-8.
- 9) Bhattacharjee N, Mukherjee KK, Chakravarti SK, Mukherjee MK, De PN, Sengupta M, et al. Dengue haemorrhagic fever (DHF) outbreak in Calcutta - 1990. J Commun Dis 1993; 25: 10-4.
- 10) Cherian T, Ponnuraj E, Kuruvilla T, Kirubakaran C, John TJ, Raghupathy P. An epidemic of dengue hemorrhagic fever & dengue shock syndrome in & around Vellore. Indian J Med Res 1994; 100: 51-60.
- 11) Daily News papers