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Prevalence and Serotype Distribution of Dengue Virus in Jharkhand India.- A Systemic Review

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ABSTRACT: Dengue is caused by a virus with five serotypes is transmitted by the bite of Aedes aegypti mosquito .It can cause symptomatic disease which can occasionally be fatal. Jharkhand has witnessed an increase incidence of dengue in recent years due to non adherence to preventive strategies .The infection is known to exhibit a seasonal trend with changes in temperature being an important contributor. Studies on virus serotype have not been done in Jharkhand a tribal predominant State. So identification of the virus serotype may have its future implication in development of clinical strategies for prevention and control of the disease in the tribal predominant state.

Keywords: Dengue virus, diseases, Jharkhand, climatic conditions, and India.

Introduction

This study is used to evaluate the prevalence and stereotype distribution of dengue virus in Jharkhand, India. Dengue is a vector borne disease which is a major threat of Jharkhand. The distribution of dengue virus enhances the different components which are integrated with the species of mosquitoes. Dengue has emerged as a major public health concern for the most parts of the world, including the many countries in the Indian subcontinent .70% actual burden seen in Asia [1]. Worldwide 390 millions infections per year.The efficiency of the methods encourage more users which are suitable in emerging the implications of the study. The convergence of the process initiates the methods based on the application of different levels of approaches. The development of the system enhances the strategy which is appropriate to generate the contents of dengue virus diseases. The percentage of the areas is indicted as a withdrawal on the intensity of significant variation on the program of different levels of resources. The higher demands of the process are recognized to engage the fundamental ability on the conditions of different related information. The distribution of dengue virus in the Jharkhand is also discussed in the study. The context of epidemiology of dengue virus regulates the consequences which are applicable for the Jharkhand, India. Prevalence and stereotype dengue cases of Jharkhand are also demonstrated in this study. The influence of temperature leads to provide a distribution of the virus in Jharkhand.

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Serotype distribution of Dengue

Various age group, source and region are covered properly with the involvement of serotype distribution processes along with common serotypes are present in Jharkhand. With the help of effective information it is noticed that four authentic serotypes are present in dengue such as DENV-1, DENV-2, DENV-3, and DENV-4. The fifth variant DENV-5 has been isolated but no indication found in India. [2].It is important to maintain distribution of these serotypes. Severity diseases are justified properly with the help of serotype distribution in Jharkhand. Various strains are justified properly with the help of proper and effective serotype. High performing molecular methods can be utilized serotype distribution process. This factor can maintain this arbovirus infection properly, as well as clinical isolation is evaluated with the help of serotype distribution process.

Distribution of Dengue Virus in Jharkhand, India

The contamination of dengue virus is the serious problem in India. According to[3], the different rates of distribution are reported in various areas of Jharkhand. In Jharkhand state of India, dengue virus diseases have been noticed in September having a huge amount of cases. The different range of the diseases leads to identify the process by analyzing the parameters of dengue virus disease. In different region of Jharkhand, the distribution of dengue virus is evaluated in the given table below.
The given table describes the distribution of virus in Jharkhand having different percentage of approximation[4].

SI NO .	Different regions of Jharkhand	Distribution of dengue virus disease %
1 .	Ranchi	10.23
2 .	Hazaribagh	8.76
3 .	Dhanbad	3.40
4 .	Jamsedhpur	2.45
5 .	Bokaro	2.00
6 .	Dumka	1.56
7 .	Sahibganj	0.5

There are seven regions of Jharkhand consist of different rate of dengue virus distribution on the strategy of the India. In Ranchi, the distribution of virus consists of higher rate i.e. 10.23 and in sahibganj, the distribution of dengue virus disease consist of lower rate i.e. 0.5. According to [5].the prevalence, distribution, and the satisfaction of the disease lead to the major cause in Jharkhand, India. The different environmental factors outbreak the effect of virus in the context of different regions of the Jharkhand. The short term and the long term functions are prominent for the distribution of dengue virus disease. The suitable needs of the virus regulate the functions in terms of certain level of approaches. The different problems of dengue virus diseases claim the changes of climate which are expected to be an increase

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amount in the performance of India. This is the problem which is typically used in the distribution of the disease.

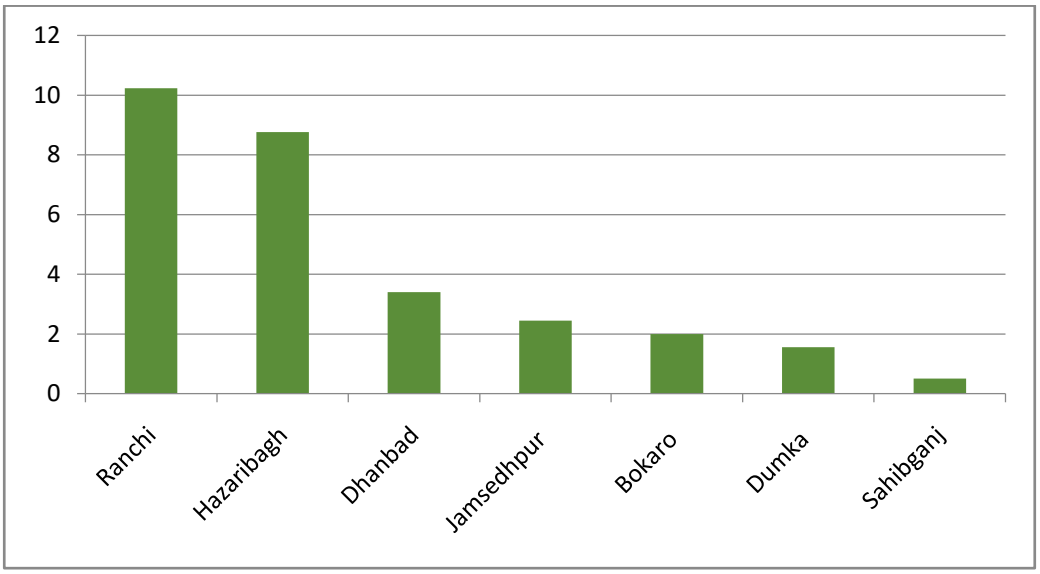

Figure 1. Distribution of Dengue Virus in Jharkhand, India

The given graph shows the distribution of dengue virus disease in different regions of Jharkhand, India. The practices of stereotype among the regions are relevant with the system of distributed dengue virus. The rate of higher distribution leads to increase the process on the context of different level of enhancement. The surveillance of the disease is evaluated on the states of Jharkhand. The several species of mosquitoes leads to affect the human beings on the probability of Jharkhand, India. Dengue tend to have cyclic patterns and show a trend to spike 5-6 yrs and 2 -3 yrs respectively .The different mechanisms lead to cause the prevalence and stereotype distribution of dengue virus disease [6].

Epidemiological context of dengue in the state of Jharkhand, India

The context of dengue virus leads to become more frequent in different parts of Jharkhand, India. In different years, the rate of dengue virus increases rapidly based on the phenomenon of suitable regions. Over the years from 1998 to 2020, the incident of dengue are occurs which leads to cause fever. As per [7], the different symptoms of dengue cause illness to manifest the spectrum of dengue diseases. The breeding sites of mosquitoes are evaluated in order to control the threats of the diseases. In the given graph, the epidemiological context of dengue in different regions of Jharkhand is shown. The region such as Ranchi, Jamshedpur, Dhanbad, and bokaro shows the evaluation of dengue virus diseases.

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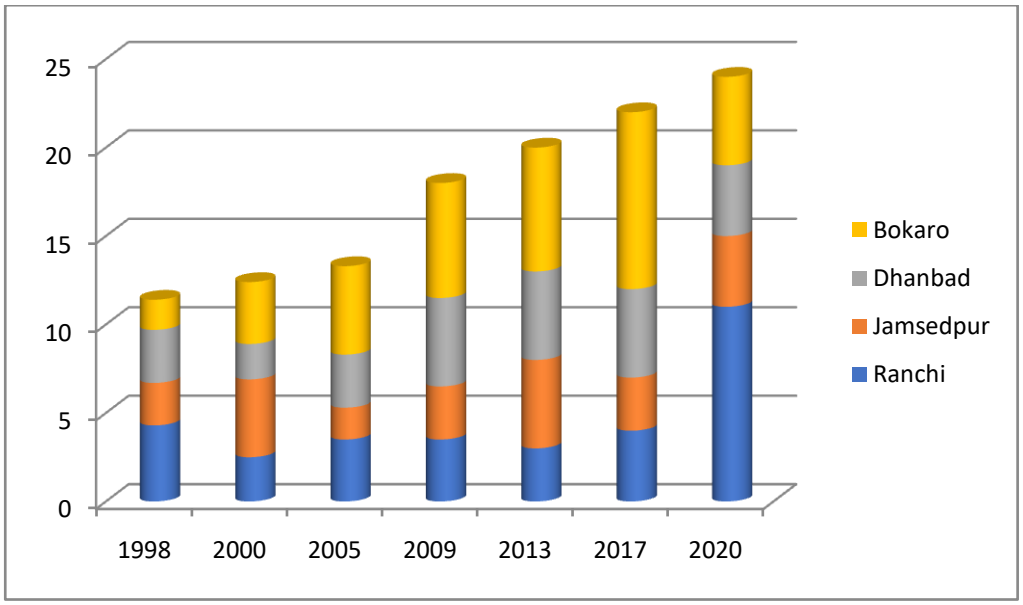

Figure 2. Epidemiological context of dengue virus disease

The given graph shows the context of dengue virus disease in different regions of Jharkhand. From the year 1998 to 2020, the rate of dengue virus increases rapidly by the influence of the process. In 1998, Bokaro shows the lowest range of dengue and in the year 2020, Bokaro shows the highest rate of dengue virus disease in Jharkhand. According to [3].the epidemic of dengue is occurring due to the higher influence of the mosquito. The incidence of dengue is rapidly increasing in the year from 2006 to 2010. In the year 2006, Jamshedpur, Dhanbad, and Ranchi show the lowest rate of dengue virus in India. In the year 2010, the context of dengue virus diseases shows higher rate in some regions of the Jharkhand. The perspectives of the rate determine the functions on the decade of different regions of Jharkhand. From 2015 onwards, the regions of Jharkhand such as Dhanbad, Bokaro, Ranchi, and Jamshedpur have become endemic for dengue virus [8].

The average rate of incidence experienced by Jharkhand has the higher incidence of dengue in 2017 and 2019. The overall rate of dengue helps in evaluating the value on the states of Jharkhand. As the distribution of dengue virus in India increase, the rate of endemic factor also gets increased. The economic environment of Jharkhand is used to create awareness by evaluating the functions of dengue virus. In Jharkhand, the rates of dengue are somehow reducing with the variation of different regions. The different rate of the process analyzes the systems based on the management of certain acquaintances. It plays a role in establishing the efficiency of the system on the context of the given study of dengue distribution. The overall distribution of dengue disease analyzed by evaluating the value of prevalence and stereotype distribution in Jharkhand. The distribution of different regions of Jharkhand helps in determining the growth of Jharkhand state, India [9].

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The table given below describes the context of dengue virus disease in the state of Jharkhand

SI NO.	Region of Jharkhand states	In the perspective year from 1998 to 2020	Epidemiological context of dengue virus diseases. %
1.	Bokaro	1998-2000	2.5
2 .	Dhanbad	2005-2008	4.3
3 .	Ranchi	2009-2013	6.1
4 .	Jamshedpur	2017-2020	7.2

The table shows the epidemiological context of dengue virus disease on the perspectives of the year from 1998 to 2020. [10] Stated that, the variation of dengue virus evaluates the rate in Jharkhand, India. The contamination of dengue of is higher in the year 2019 and lower in the year 2020. The different variation shows different value of dengue by analyzing the growth of the states of Jharkhand .The table given above shows the distribution of dengue virus disease on the basis of different range at different year.

Prevalence and stereotype dengue cases of Jharkhand, India

In the different district of Jharkhand, the prevalence and stereotype dengue cases are rapidly increasing. The endemic for dengue virus diseases leads to cause the vector-borne effect which was carried out with different rate. The different insecticides are used as an integrated part to minimize the breeding of mosquito. The suitable rates are used to transmit the virus based on the proportion of the state. The perspectives of the dengue distribution helps in evaluating the functions of prevalence in Jharkhand state. The evaluation of the disease leads to cause death on the context of distribution. The given graph shows the case and the death due to dengue in Jharkhand state of India

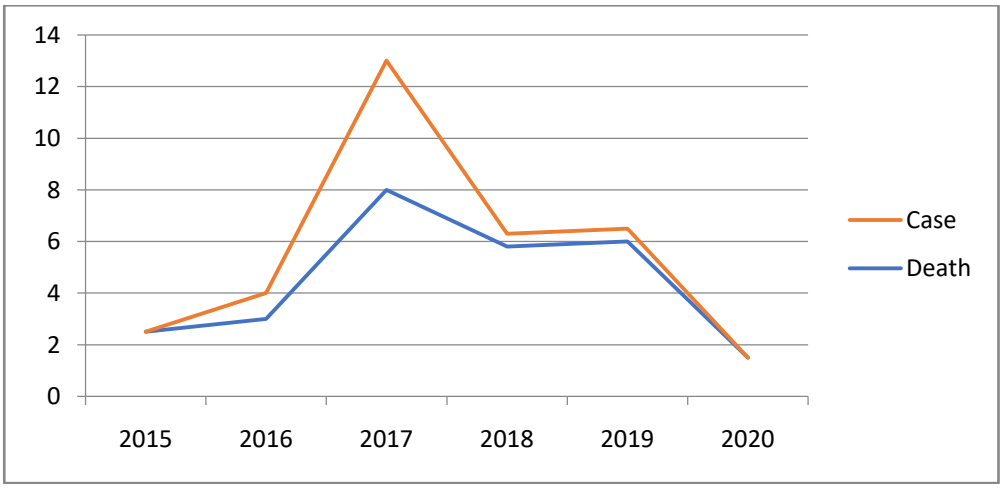

Figure 3. Different cases and death rate of dengue in Jharkhand state

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The given graph shows the cases and death rate in Jharkhand state due to dengue virus. From year 2015 to 2020, the cases of dengue have increased rapidly. Here, the rate of infected case of dengue is more than that of the death case. According to [11].the maximum rate of virus has the highest rate during the period of different year. The strategy of prevalence leads to affect the case of dengue virus which has the higher rate in Jharkhand. It helps in the growth of the economy on the aspects of suitable analysis. The rate of dengue virus has distributed on the strategy of different states of Jharkhand. The death rate in the year 2017 is more as compared to another year. The infected case of dengue virus is more in 2017 to that of another year.

The table given below shows the different rate of infected cases and the death rate on the perspectives of the year from 2006 to 2019 [12].

Per cent contribution range of dengue cases and deaths, population contribution and population density (per sq.km) in 2001 and 2011 along with infection rate (per 100 000 population)

Serial No.	Dengue cases range (%)	Dengue death range (%)	Population contribution (%)	Population density per sq.km 2001*	Population density per sq.km 2011	Infection rate (per lakh population)
1	0.00-0.44	0.00-1.54	2.61-2.92	338	414	0.00-2.09

*Source: http://niti.gov.in/niti/content/population-density-sq-km

The different information related to the dengue virus case increases the complexity to provide a framework in order to summarize the availability of the Jharkhand. In the year 2017, the infected case of dengue virus disease in Jharkhand state is high and low in 2020 year. The percentage of the areas is indicted as a withdrawal on the intensity of significant variation on the program of different levels of resources.

Influence of temperature on monthly distribution of dengue virus disease in Jharkhand

The strategy of temperature has a great influence on the distribution of dengue virus diseases. The development of dengue virus disease in states of Jharkhand influence the role of temperature for distribution. According to[13], the different zones predict the range on the basis of daily mean rate of temperature. The monthly distribution of dengue virus cases are occur in different year based on the influence of temperature. The different month shows different rate of cases in the perspectives of the Jharkhand state. The majority of the dengue fever is estimated in different regions of Jharkhand state. The appropriate formulation of dengue virus was conducted in order to manifest the predictions of the disease. The given below graph shows the monthly distribution of cases in different year.

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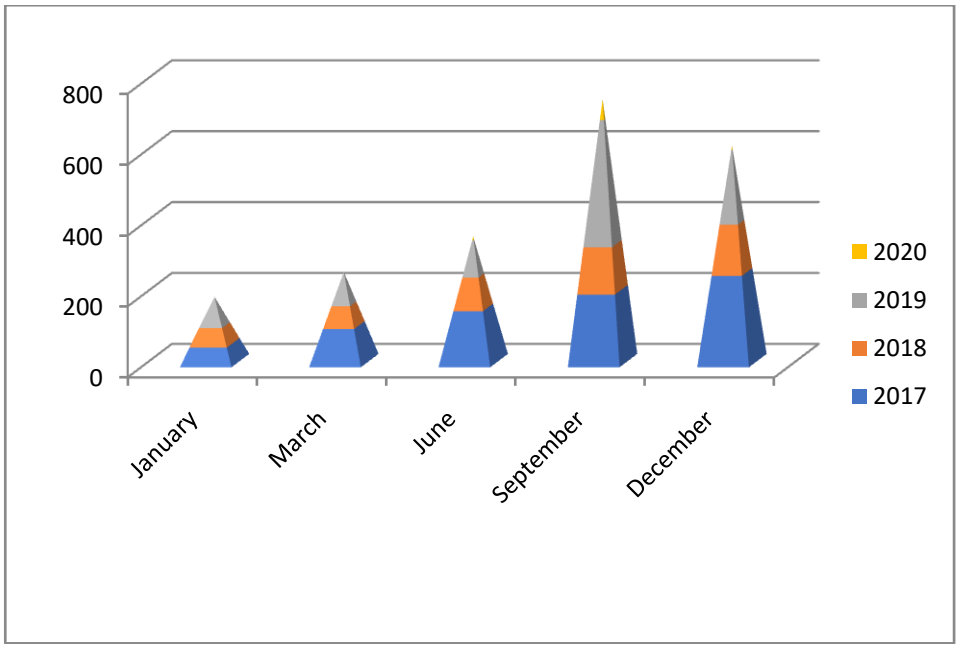

Figure 4. Monthly Distribution of Dengue cases in Jharkhand state in different year

The given graph shows different distribution of dengue cases in the state of Jharkhand. In different year such as January, March, June, September, and December, the different case of dengue virus are shown. In the month of January in 2017, the case is low as compared to the month of December. As per, [14] the distribution of dengue consist of more cases in the year 2019 in the month of September to December.

A different case shows the month wise distribution of the disease on the context of some districts of Jharkhand state. Influence of temperature on monthly distribution of dengue disease shows the rate in the table below.

	2017	**2018**	**2019**	**2020**
January	50	50	80	0
March	100	60	90	0
June	150	90	100	10
September	200	130	350	60
December	250	140	205	9

Sources: https://nvbdcp.gov.in/index4.php?lang=1&level=0&linkid=431&lid=3715

The table shows the different distribution of dengue virus in the perspectives of different year in Jharkhand state. In the year 2017 of January month, the case of dengue is less in comparison with the year 2020. In the year 2018 of December month, the case of dengue is more as compared to the year 2020. It helps to illustrate the functions to provide a broader action by demonstrating the distribution of the disease. The increased population and the rate of increased growth are dependent on the progress which is occurring due to the determination of dengue disease [15].

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Conclusions

From the above study of the report, it can conclude that the distribution of dengue virus is a major public health problem in Jharkhand. Dengue fever is endemic in Jharkhand region based on the scenario of different outcomes of India. The contamination of dengue virus enhances the prevalence and stereotype distribution in Jharkhand. More study is requiring for serotype distribution .The study shows the concern regarding the various problems faced by India due to dengue virus diseases. The influence of mosquito is the major cause of dengue virus on the advancement of the country. This is the main issues which rationalize the approach of the suitable system. The fragmentation of the system creates a problem on the basis of different factors of dengue virus. The conclusion of the study is to analyze the different causes of diseases in order to mitigate the strategy of the Jharkhand, India.

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