



Research Article

Dengue Hemorrhagic Fever- An Extensive Awareness Survey

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Introduction:

The dengue virus is an arthropod-borne virus with four different serotypes that belongs to the genus Flavivirus and family Flaviviridae (DEN-1, DEN-2, DEN-3, and DEN-4). Dengue is regarded by the World Health Organization (WHO) as a serious global public health threat in tropics and subtropics countries (^{1,2,3}) Between 1960 and

Abstract:

Aedes mosquitoes transmit the acute viral disease dengue, which is brought on by the Flaviviridae RNA virus family. Asymptomatic fever with terrifying consequences, including hemorrhagic fever and shock, may be the presenting symptoms. The most typical symptoms include a high temperature with a sudden start, muscular and joint discomfort, myalgia, a rash on the skin, hemorrhagic episodes, and circulatory shock. Even though oral symptoms are rarely the main presenting symptom of dengue infection, this can happen in some situations. An early and precise diagnosis is essential to reduce mortality. Dengue infection has emerged as a public health issue in tropical and subtropical countries, despite the fact that dengue virus infections are typically self-limiting. This article offers a comprehensive review of dengue virus infections, including information on distinct clinical symptoms, differential diagnosis, diagnosis, prevention, and therapy. The survey conducted from 1st AUGUST to 15th SEPTEMBER.

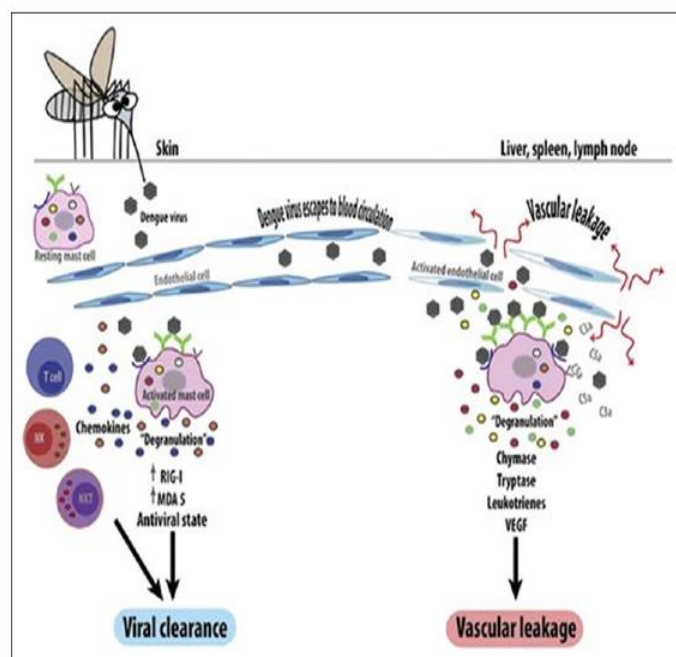
Keywords: Dengue virus, hemorrhagic diathesis, breakbone fever, cutaneous rash, dental and public health implications, and oral manifestations.

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2010, dengue cases surged by 30 times globally as a result of rapid population development, climate change, unplanned urbanisation, ineffective mosquito control, frequent air travel, and a dearth of medical facilities. There are 2.5 billion people who live in dengue-endemic areas, with 400 million illnesses occurring yearly and a fatality

rate that exceeds 5-20% in some places. More than 100 nations, including Europe and the United States, are affected by dengue infection (USA).^(4,5,6) The first incidence of dengue-like sickness to be documented in India happened in Madras in 1780, and the first dengue fever pandemic to be scientifically proven in India occurred in Calcutta and the Eastern Coast of India in 1963–1964. Clinical manifestations of dengue virus infection are varied and vary from asymptomatic disease to dengue fever to the severe sickness known as dengue hemorrhagic fever/dengue shock syndrome (DHF/DSS). Although oral characteristics are more typically linked to DHF than DF, oral mucosal involvement is present in about 30% of patients. Since dengue virus infection has a variety of clinical manifestations, a precise diagnosis is challenging and depends on laboratory confirmation. Since there is now no antiviral medication available, the problem typically resolves on its own. The foundation of supportive care is adequate bed rest, fluid replacement, and analgesics. Upon a mosquito bite, the dengue virus enters the host organism through the skin. The development of the illness is thought to be influenced by innate, cellular, and humoral host immune responses. The more severe clinical symptoms appear after the virus has been rapidly removed from the host organism. Therefore, a high viral load does not correspond with the most severe clinical manifestation during the course of the infection. An increased loss of protein and plasma results from changes in thromboregulatory systems and endothelial microvascular permeability. Plasma leakage is thought to be mediated by endothelial cell activation brought on by monocytes, T-cells, the complement system, and different inflammatory chemicals.^(7,8,9) Thrombocytopenia might be caused by changes in megakaryocytopoiesis, which show up as human hematopoietic cell infection and stunted progenitor cell proliferation. Although it can happen after the original secondary infection, this stage is mostly found in the primary infection. Clinically, it is challenging to distinguish from a variety of other viral

illnesses and frequently misdiagnosed. The three phases of the clinical course of DHF are febrile, leaking, and convalescent. The beginning of febrile sickness is characterised by a high-grade fever with an acute start, constitutional symptoms, and facial erythema. Early febrile sickness is characterised by hemorrhagic tendencies and a morbilliform rash. When the patient recovers or moves on to the plasma leakage phase, the fever lasts for two to seven days before dropping to normal or subnormal levels. Symptoms of Frank shock with low pulse pressure, cyanosis, hepatomegaly, pleural and pericardial effusions, and ascites are symptoms of high plasma escape instances.⁽¹⁰⁾ In a few instances, severe ecchymosis and gastrointestinal bleeding followed by epistaxis may also be seen. At this stage, bradycardia, confluent petechial rashes, erythema, and pallor are visible.



Methodology:

This research was observational and prospective. The poll on awareness was conducted from the first of August to the fifteenth of September. A self-made survey was used, and it was disseminated via social media. Our research was both time and money-efficient. The participants displayed the utmost interest in answering our questionnaire. Smart technologies, including smart phones and laptops with an internet

connection, were employed by study participants. As a result, Google forms were used to track and evaluate all responses. As a result, the investigation took several days. The CDC, Ministry of Health, and Family Welfare requirements were followed in the creation of the Google-based questionnaire. The inquiries centred on fundamental Dengue Fever prevention strategies. Software from Microsoft called Excel was used to record and examine the response.

Result:

Among 101 participants, Most of them were working professionals.

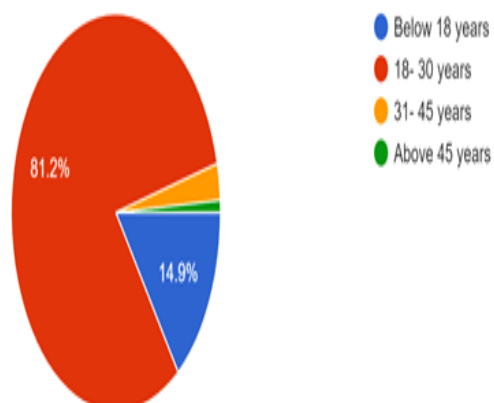
Fifty percent of the participants were following the safety measures and precautions suggested by CDC.

Patient Age Distribution:

Table 1: Demographic details by age

Age group	Number of participants	Percentage
Below 18	15	14.9%
18-30	82	81.2%
31-45	3	2.9%
Above 45 years	1	0.9%

Age of participant
101 responses

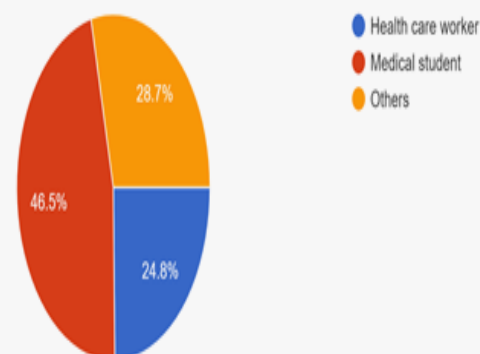


To embark upon, statistical analysis shows the no of participants belongs to above age 18. Moreover, a maximum involvement towards awareness belongs to age of 18-30 which are listed bellow accordingly in table .

Table 2: Occupation

Options	Total count	Percentage
HEALTHCARE WORKER	25	24.8%
MEDICAL STUDENT	47	46.5%
OTHERS	29	28.7%

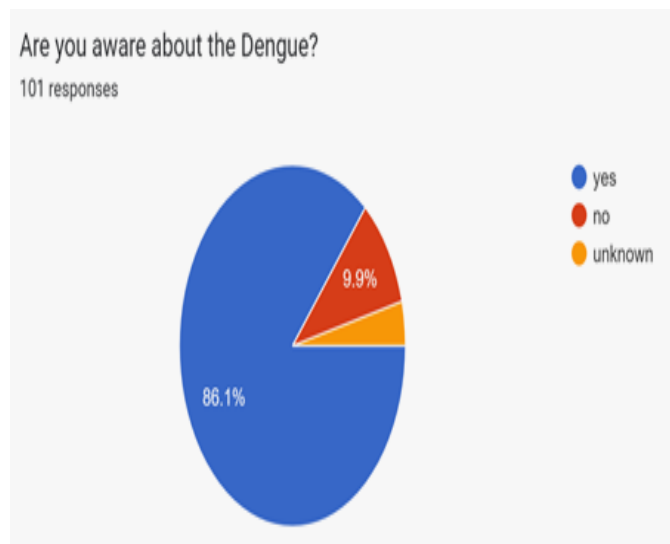
Occupation
101 responses



In addition with, a prospective study shows that around 24.8% participants were from health care workers, medical students were 46.5% participants and other participants were 28.7%. Hence, occupations were listed in table 2.

Table 3: Awareness about the Dengue?

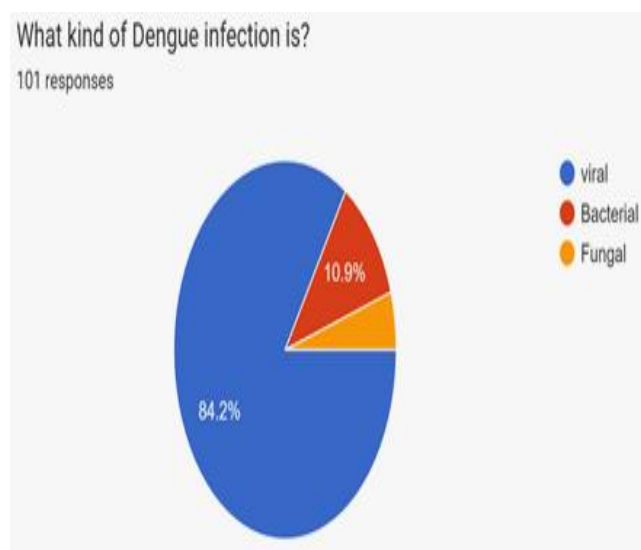
Option	Total Count	Percentage
YES	87	86.1%
NO	10	9.9%
UNKNOWN	4	4%



On the contrary, out of 101 participants 86.1% has opted yes, 9.9% has opted no and remaining of them were seen 4% as unknown which were listed in table 3.

Table 4: Kind Dengue Infection ?

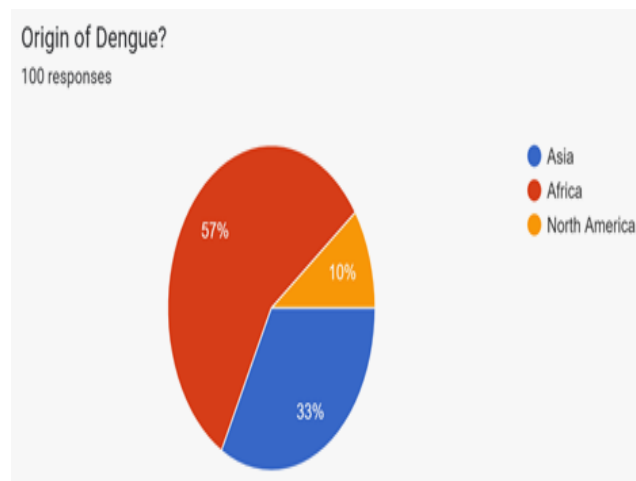
Infection	Total Count	Percentage
Viral	85	84.2%
Bacterial	11	10.9%
Fungal	5	4.9%



Around 15% participants have chosen bacterial infection, 5% has chosen fungal infection whereas, 80% participants has chosen viral infection which were listed in table 4 .

Table 5: Dengue originated?

Origin	Total Count	Percentage
ASIA	33	33%
AFRICA	57	57%
NORTH AFRICA	10	10%



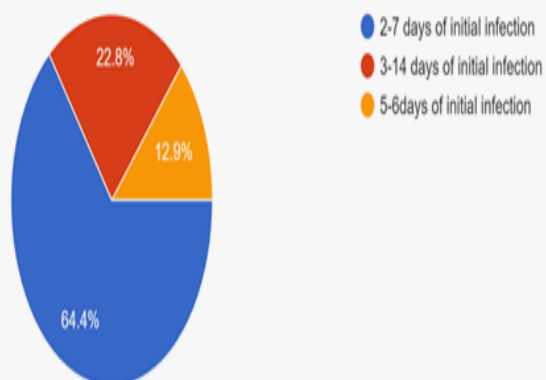
Our studies shows that around 33% participants has selected Asia, 57% has selected Africa and remaining 10% has selected North Africa which were listed in table 5

Table 6: Dengue infection showed it's symptoms ?

Symptoms	Total Count	Percentage
2-7 days of initial infection	65	64.4%
3-14 days of initial infection	23	22.8%
5-6 days of initial infection	13	2.9%

When Dengue infection showed its symptoms?

101 responses



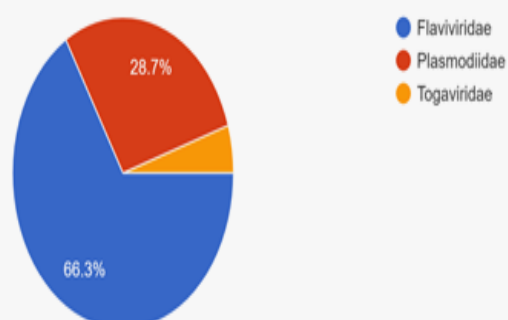
Our studies shows that 64.4% participants has selected Dengue infection showed its symptoms within 2-7 days of initial infection; 22.8% participants has selected Dengue infection showed its symptoms within 3-14 days of initial infection; 12.9% participants participants has selected Dengue infection showed its symptoms within 5-6 days of initial infection. Which were listed in table 6.

Table 7: Organism responsible for Dngue .

Options	Number of Participants	Percentage %
Flaviviridae	67	66.3%
Plasmodidae	29	28.7%
Togaviridae	5	5%

Dengue virus belongs to which family of organism?

101 responses



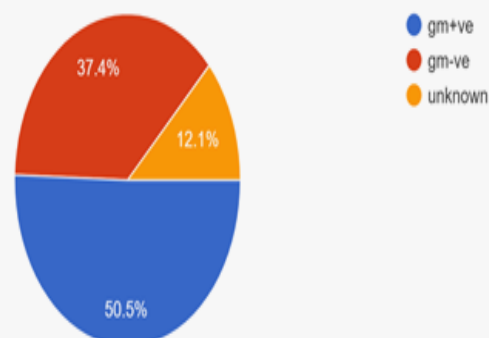
This prospective study has asked regarding organism responsible for this fever as participants has selected by Flaviviridae 66.3 %, 28.7% of Plasmodidae Virus and Togaviridae Virus 5% which were listed in table 7.

Table 8: Is Danguue gm+ve / gm+ve virus ?

Options	Number of Participants	Percentage %
Gm+ve	50	50.5%
Gm+ve	37	37.4%
Unknown	12	12.1%

Is Danguue gm+ve /gm+ve virus?

99 responses



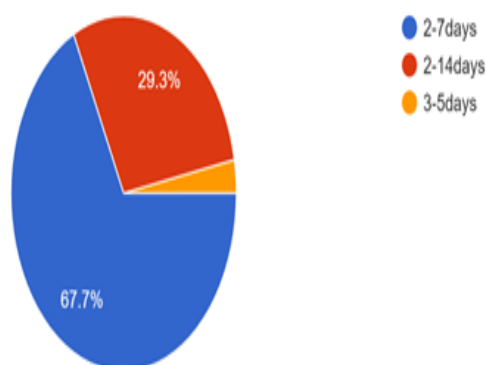
To embark upon statistical analysis shows that 50% belongs to Gm+Ve on the contrary 37.4% is Gm-Ve . Our study also shows that rest of 12% belongs to unknown category.

Table 9 : Danguue virus lasts for .

Options	Number of Participants	Percentage %
2-7 days	67	67.7%
2-14 days	29	29.3%
3-5 days	3	3%

How long will symptoms of Dengue last?

99 responses



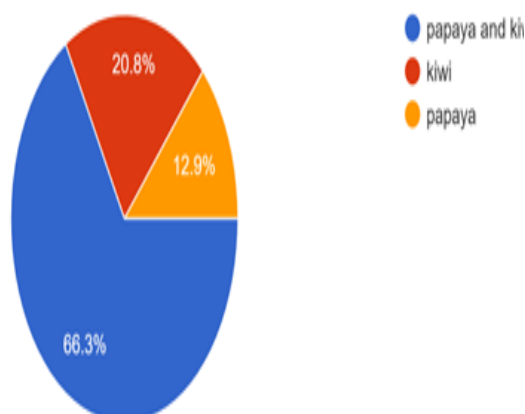
Dengue lasts for 2–7 days in this case study, accounting for 67.7% of the 99 responses. 29.3% of this graphic chart represents the duration of this contagious illness, which is 2–14 days. whereas the remaining 3% were annexed for 3-5 days.

Table 10 : Fruit good for Dengue .

Options	Number of Participants	Percentage %
Papaya & kiwi	67	66.3%
kiwi	21	20.8%
Papaya	13	12.9%

Which fruit is good for Dengue?

101 responses



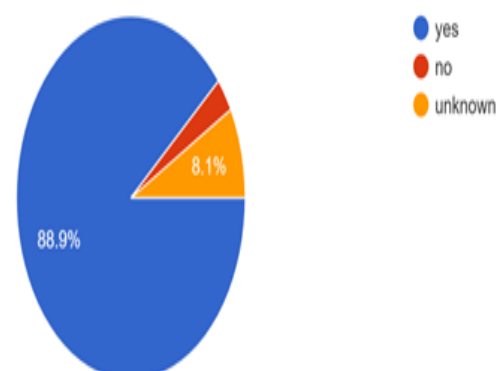
The provided data of table number 10 shows that name of some good fruits for Danguae . In this pie chart, Papaya and kiwi occupies 66.3% out of 101 responses. Our studies also shows that kiwi takes up 20.8% of the supplied data . Rest 12.9% actively possessed by papaya.

Table 11 : Do kiwi increase platelets ?

Options	Number of Participants	Percentage %
Yes	89	88.9%
No	2	2%
Unknown	8	8.1%

Do kiwi increase platelets?

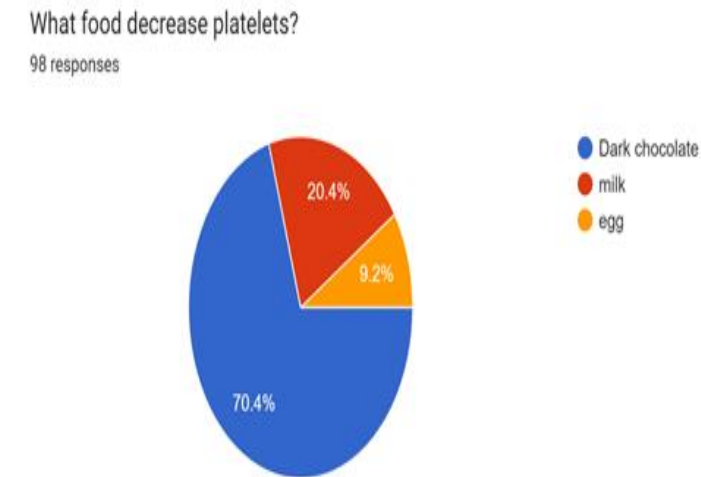
99 responses



A prospective study shows that, around 88.9% belongs to option- Yes of increasing platelets by Kiwi out of 99 responses. In addition with, 2% and 8.1% belong to option- No and Unknown respectively.

Table 12 : What food decrease platelets ?

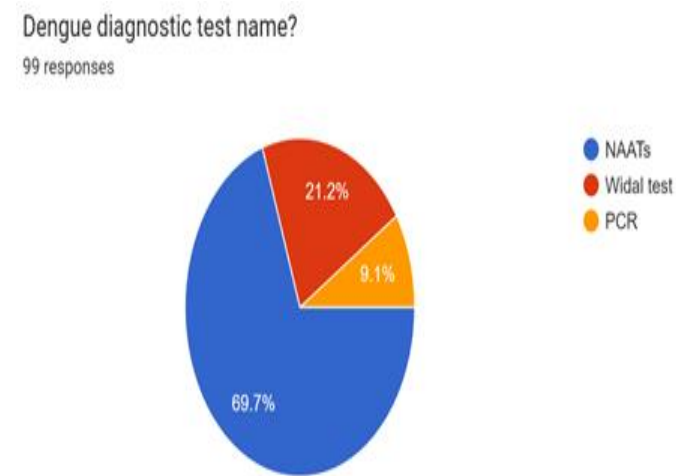
Options	Number of Participants	Percentage %
Dark chocolate	70	70.4%
Milk	20	20.4%
Egg	8	9.2%



. This statistical analysis demonstrates which foods reduce platelets during the Dangu. Dark chocolate, which has 70 participants, accounts for 74.4% of the 98 responses. Furthermore, milk was responsible for 20.4% of the provided information, and eight participants seized 9.2%

Table 13: Dengue diagnostic test name ?

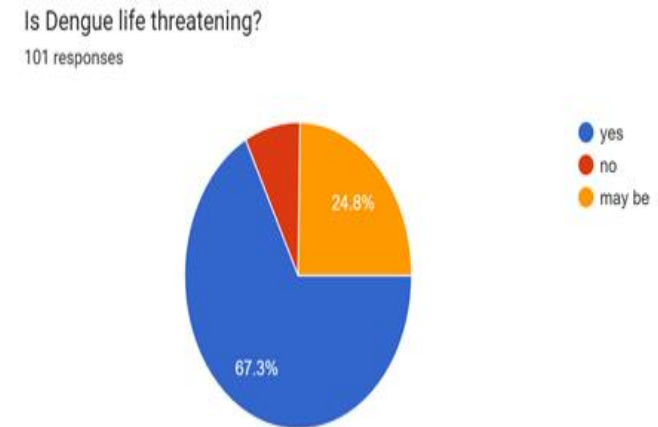
Options	Number of Participants	Percentage %
NAATs	69	69.7%
Widal test	21	21.2%
PCR	9	9.1%



69.7% of participants were following NAATs Dangu diagnostic test . Moreover 21.2% involvement towards WIDAL Test and other 9.1% participants were PCR .

Table 14 : Is Dengue life threatening ?

Options	Number of Participants	Percentage %
Yes	68	67.3%
No	8	7.9%
Maybe	25	24.8%



Out of 101 participants 67.3% has adopted Yes , 7.9% has opted No and remaining of them were seen 24.8% as " Maybe " which were listed in table no 14.

Discussions:

Following the febrile period, fluid replenishment and antipyretic therapy with paracetamol are the preferred treatments. Avoid using additional nonsteroidal anti-inflammatory medications. During the infection's critical period, judicious fluid delivery is the cornerstone of treatment. The fluids that are usually given are normal saline, Ringer's Lactate, and 5% glucose diluted 1:2 or 1:1 in normal saline, plasma, plasma replacements, or 5% albumin.

The following principles of fluid treatment are outlined in guidelines.

Supplemental oral fluid intake must be as extensive as possible. However, shock, acute vomiting, and prostration require the introduction of intravenous fluids (in cases where the patient is unable to take fluids orally).

The preferred intravenous fluid is a crystalloid (0.9% saline).

The second-line treatments are used for hypotensive conditions that don't respond to

boluses of intravenous crystalloids or colloids (like dextran).

Low platelet levels and the patient's continued critical condition should raise serious bleeding concerns. Suspected bleeding cases require fresh whole blood transfusions as the best treatment option.

Oral lesions are rarely observed and frequently mistaken for platelet abnormalities. Platelet transfusions are required for serious hemorrhagic symptoms. Even at 20,000/cu mm, there is typically no need to administer prophylactic platelets. In the absence of bleeding signs, prophylactic platelets at a dose of 10,000/cu mm may be administered. Red cell transfusion and platelet transfusion may both be required in the event of systemic massive bleeding. Monitoring liver function is necessary. Future directions for preventing and treating dengue infection include the control of mosquito (vector) transmission, the creation of a dengue vaccine, and the development of antiviral medications. Guppies (*Poecilia reticulata*) or copepods (*Doridicola agilis*) can be kept in standing water to control mosquito (vector) transmission, and the mosquito population can be infected with bacteria from the *Wolbachia* genus. The need for a dengue vaccine has become increasingly important as a result of the disease's spreading transmission and growing severity. A tetravalent dengue vaccine that is economical, effective, and safe is urgently needed for global public health. Complex pathology, the requirement to manage four virus serotypes, and insufficient funding by vaccine developers has slowed the development of vaccines.

Conclusion:

In more than 100 nations, dengue now threatens the lives of almost 2.5 billion people, making it a serious public health issue. The doctor should guarantee an early and adequate treatment plan by being knowledgeable of the many clinical signs of this ailment. Future efforts to treat this terrible illness will focus on developing vaccines, antiviral

medication regimens, and mosquito control strategies.

Conflict Of Interest: None Declared

Funding: Self -Funding

List Of Abbreviation:

CDC- Centers for Disease Control and Prevention

NAAT- Nucleic acid amplification test

PCR- Polymerase chain reaction

DHF- Dengue hemorrhagic fever

DF- Dengue fever

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