### **Original Research Article**

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# A study on awareness and prevention of dengue fever among outpatients attending a health centre in the rural area of Kancheepuram district

A. Johnpaul\*, A. Abdul Azeez Thoufiq, R. Umadevi

Department of Community Medicine, Bharath University, Chrompet, Chennai, Tamil Nadu, India

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## \*Correspondence: Dr. A Johnpaul,

E-mail: dr.johnvinutha@gmail.com

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#### **ABSTRACT**

**Background:** Dengue fever has become one of the major public health problems in all developing countries. It is essential to create awareness among people as it can be prevented by simple practices. The study was conducted to find the awareness among the people thus determining the need to educate the people regarding the preventive measures of dengue fever.

**Methods:** This was a cross-sectional community-based study conducted among the outpatients and their attenders visiting a Rural Health Training Center of private Medical College and Hospital, belonging to Alandur block in Kancheepuram district, Tamil Nadu during January 2019 to March 2019. 260 subjects within the age group of 18 to 82 years were selected by convenient sampling method. The data was collected by interviewing and by using questionnaires. Analysis of the structured data was done using SPSS software version 16.

**Results:** The study included 260 respondents who gave their consent for the study. 60.8% of the study group were males. Mean age of the study group was 35.36 years. 58.1% of the individuals were educated more that 10<sup>th</sup> standard. Knowledge about the mode of transmission was correctly stated by 85.8%. Around 15% were not aware of breeding places of mosquitoes.

**Conclusions:** From this study it was evident that there is a definite gap in understanding the various aspects of dengue fever. Thus, we conclude that regular awareness programs should be conducted in the form of campaigns and house visits to create awareness among all individuals.

Keywords: Arbovirus, Dengue fever, Dengue haemorrhagic fever, Dengue shock syndrome, Preventive measures

#### **INTRODUCTION**

Dengue fever is caused by arboviruses capable of infecting humans. It is transmitted by the infective bite of female Aedes Aegypti mosquito. The disease manifestation is observed 5 to 6 days after being bitten by an infective mosquito. The infected person can be asymptomatic or may lead to (a) classic dengue fever (b) dengue haemorrhagic fever without shock (DHF), or (c) dengue shock syndrome (DSS). DHF and DSS are the severe forms of dengue fever which may lead to death.

It is estimated that 2.5 to 3 billion people accounting to 40% of world's population are at risk for dengue infection. Epidemics of dengue are increasing in frequency. Dengue and DHF are endemic in more than 100 countries. In India, 1st outbreak of dengue was recorded in the year 1812. In India, a double peak hemorrhagic fever epidemic occurred for the first time in Calcutta between July 1963 and March 1964. Dengue cases reported in 2009 were less than 60,000, cases increased to 188,401 in 2017 according to the data from National Vector Borne Disease Control Programme

(NVBDCP). 2017. Tamil Nadu reported 23294 cases and 65 deaths due to Dengue in 2017.<sup>2</sup>

The recent increasing trend in the dengue fever is attributed to rapid urbanization, lifestyle changes and deficient water management like improper water storage leading to proliferation of mosquito breeding sites.<sup>3</sup>

#### **Objective**

This study was conducted to find the awareness among the outpatients and their attenders attending the primary health centre regarding the cause, mode of spread, clinical feature, treatment, complications and prevention of Dengue fever thus determining the need to educate the people regarding the preventive measures of dengue fever.

#### **METHODS**

A community based, cross sectional study was conducted among the outpatients and their attenders at the Rural Health Training Center (RHTC) of private Medical College and Hospital, belonging to Alandur block in Kancheepuram district, Tamil Nadu. The duration of the study was from January 2019 to March 2019.

#### Inclusion criteria

Adult (>18 yrs) willing to give consent for the study.

Convenient sampling method was followed. Thus 260 individuals willing to give their consent participated in the study. Each individual was given a questionnaire and also interviewed to acquire the details.

The study was conducted after obtaining clearance from the Institutional Research Ethics Committee. Questionnaire used was in English language, which was translated to the regional language (Tamil) for better understanding of the participants and their response was documented in English. The questionnaire included basic details of the individual (like age, sex and education) and 10 questions related to the awareness and prevention of dengue fever.

Data entry and analysis was done using Statistical Package for Social Sciences (SPSS) version 16.

#### **RESULTS**

A total number of 260 individuals gave their consent for the study. Age of the individuals was between 18 to 82 years, thus the mean age was 35.36%. Number of male respondents (60.8%) were more than the number of females (39.2%). Majority of the individuals were between 31 to 40 years of age. Percentage of the individuals with education beyond 10th standard was 58.1% (Table 1).

Table 1: Socio-demographic characteristics of the study participants (n=260).

Variables	No. of individuals	% of individuals		
Age group in years				
18 to 30	62	23.9		
31 to 40	90	34.6		
41 to 50	47	18.1		
51 to 60	32	12.3		
61 to 70	21	8.1		
71 to 82	8	3.0		
Sex of the participants				
Male	158	60.8		
Female	102	39.2		
Education				
<10 standard	109	41.9		
>10 standard	151	58.1		

Questionnaire included 10 questions related to awareness and prevention of dengue fever were analysed among these 260 individuals. Majority of the population were aware of the dengue fever (86.5%) (Figure 1).

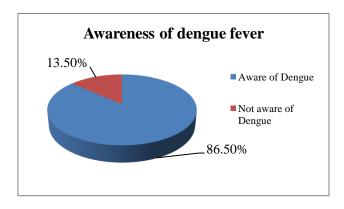


Figure 1: Awareness of dengue fever among study participants.

It was found that all 151 individuals with more than primary school educational qualification were aware of dengue. Most of the individuals were aware that mode of transmission of dengue is by mosquito (85.8%). However 9.2%, 3.1%, 1.2% and 0.7% of the study group had misconceptions that dengue can spread by water, human to human, food and air respectively.

Breeding places of the mosquito was known correctly to around 85% of the study participants. Symptoms of dengue fever was rightly stated by most of the individuals (93.5%) with multiple answers like fever, headache, myalgia, bone pain, skin rash and haemorrhagic manifestations. Treatment availability was known to 75.5% of the individuals. Few individuals (17.3%) were not aware that complete recovery is possible with proper and timely treatment. Diagnostic availability was known to 80 % of the study participants. Complications like haemorrhage (43.5%), thrombocytopenia (39.2%), death,

shock were stated by the respondents. Significant number of people that is 12.7% of them were not aware of the complications of dengue (Table 2).

Table 2: Awareness about mode of transmission of mosquitos.

Variables	Frequency	% of individuals		
Mode of transmission	l			
Mosquitoes	223	85.9		
Water	24	9.2		
Human to human	8	3.1		
Air	2	0.7		
Food	3	1.2		
Awareness on breeding places of mosquitoes				
Water stagnation in and around house	128	49.2		
Garbage	52	20		
Plants	28	10.8		
Flowing drainage water	13	5		
Not known	39	15		
Awareness regarding diagnostic availability				
Dengue can be diagnosed	208	80		
Dengue cannot be diagnosed	52	20		
Awareness on complications of dengue fever				
Haemorrhage	113	43.5		
Thrombocytopenia	102	39.2		
Death	10	3.8		
Shock	2	0.8		
Not known	33	12.7		

Table 3: Preventive measures for dengue fever (multiple response).

Variables	No of individuals	% of individuals		
Are you aware that dengue can be prevented?				
Yes	214	82.3		
No	46	17.7		
Method of preventing dengue				
Removal of artificially stagnant	122	47		
water				
Mosquito repellents	204	78.5		
Window mesh/ bed nets	198	76.2		
Keeping surrounds clean	167	64.2		
Vaccines	29	11.2		
Not known	18	6.9		

Around 82.3% of participants were aware that dengue fever can be prevented. Only 17.7% of participants were

of notion that dengue fever cannot be prevented. Multiple answers were given regarding the preventive measures of dengue fever as mentioned which are given in Table 3. Around 78.5% knew that dengue fever can be prevented by use of mosquito repellants followed by use of Window mesh/bed nets (76.2%) and maintaining clean environment (64.2%).

#### **DISCUSSION**

It has been more than two decades since Dengue fever has being reported in India. The Government of India is conducting campaigns for community awareness, various educational activities through print, electronic and interpersonnel media to reach the people and prevent the epidemics caused by dengue fever.<sup>2</sup> The results of the study done to understand the awareness of dengue fever among the study participants are discussed below.

In the study 60.8% were male and 39.2% were females. The mean age of the study group was 35.4 years. In-spite of the efforts put in for the awareness and prevention of dengue it was found that 13.5% of the study group have not heard about dengue. The study conducted by Kumar et al in Coimbatore showed similar results. In the study conducted by Priyadarsini et al in Salem the awareness about dengue was only 37.5%. 4.5

Most of the respondents knew that dengue is transmitted by mosquito bite (85.9%) which was similar to study conducted by Kumar SK, et al in Coimbatore (80.4%).<sup>5</sup> Knowledge about breeding places of mosquito was lacking in the study population, only 49.2% of the respondents knew that stagnant water is the potential breeding place of Dengue causing mosquitoes. A similar study conducted by Kumar et al among 270 subjects in Coimbatore, 30.4% of them had correct knowledge of breeding habitats of Aedes mosquitoes.<sup>6</sup>

Symptoms of dengue fever were rightly stated by 93.5% of this study group RHTC which was similar to studies conducted by Gupta et al in Delhi, 92% urban and 83% rural respondents. Treatment availability was known to 75.5% of the study population. 17.3% of the individual thought that complete recovery was not possible. Knowledge about the diagnosis of dengue was known to 80% of the people. 12.7% of the respondents were not aware of the complication of dengue fever.

#### Preventive measures

Most of the respondents (82.3%) knew that dengue was preventable. Multiple preventive measure were elicited by each respondent, which include removal of stagnant water (47%), mosquito repellents (78.5%), window mesh/bed nets (76.2%), surroundings clean (64.23%), vaccines (11.2%). However 6.9% of the respondents were not aware of any preventive measures. Kumar SS et al also gave similar statistics in their study conducted in Coimbatore, Tamil Nadu.<sup>5</sup>

#### Limitation

This study included the outpatients and the people accompanying them to the rural health centre therefore this study population represents only a part on the community. Further extensive study in a large community and household survey is essential to arrive at a definitive understanding.

#### **CONCLUSION**

From the study it was evident that there is a significant gap in understanding the various aspects of dengue fever. This gap can be bridged by regular awareness programs which can be conducted in the form of health education campaigns and house visits to educate people on the mode of transmission and preventive measures.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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