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Research Article

Awareness and practice towards dengue fever in Kannamangala village, Bangalore, Karnataka, India

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ABSTRACT

Background: Dengue is a mosquito-borne viral infection of humans. The agent causing dengue is a single-stranded RNA virus of Flaviviridae family. In recent years dengue hemorrhagic fever has become a global public health problem. Urbanization and poor management of garbage in the city limits has resulted in increase in the breeding site for *Aedes aegypti* which is a vector for dengue fever. The aim and objective was to assess the knowledge, awareness and practices towards dengue fever in Kannamangala village.
Methods: This community based cross sectional study was conducted in Kannamangala village from July 2014-December 2014. Totally 738 participants were enrolled in the study. The aim was to assess the knowledge and awareness, preventive measures and most prevalent source of information regarding dengue by using semi-structural questionnaire.
Results: Knowledge and practice regarding dengue fever is not satisfactory, 60% of the respondents said dengue is a serious illness and 68.8% said it is transmitted through mosquito bite and only 8% knew the name of the vector. Only 15.3% of the participants changed water in artificial container every week, 49.2% of the respondents got the information from Radio/TV followed by Newspaper/magazine. Only 15.4% of the respondents received information by Health personnel.
Conclusions: Lack of awareness and improper practice towards dengue is explicit in this study. Emphasis should be more on creating awareness among people. Educational intervention has to be more effective in controlling dengue fever.

Keywords: Dengue fever, Knowledge, Awareness, Practices

INTRODUCTION

Dengue is a mosquito-borne viral disease that has rapidly spread in all regions of WHO in recent years. Female mosquitoes mainly of the species *Aedes aegypti* and, to a lesser extent, *A. albopictus*, transmit dengue virus.[1]

Severe dengue (also known as dengue hemorrhagic fever) was first recognized in the 1950s during dengue epidemics in the Philippines and Thailand. Recently dengue is common in Asian and Latin American countries where it has become the leading cause of hospitalization among both adults and children in these regions.[1]

Dengue/dengue hemorrhagic fever (DHF) is an emergent disease in India. The relationship of this country with dengue has been long and intense. The first recorded epidemic of clinically dengue- like illness occurred at Madras in 1780 and the dengue virus was isolated for the first time almost simultaneously in Japan and Calcutta in 1943-1944. After the first virologically proved epidemic of dengue fever along the East Coast of India in 1963-1964, it spread to all over the country. The first full-blown epidemic of the severe form of the illness, the

dengue hemorrhagic fever/ dengue shock syndrome occurred in North India in 1996. It is endemic in 31 states and union territories of the country and contributes annual outbreaks of dengue/ DHF.[2-4]

During 2013 about 74168 cases were reported with 168 deaths, the highest number of cases were reported from Kerala, followed by Odisha, Karnataka, Tamil Nadu and Delhi.[5] Dengue is been urban disease but has spread to rural areas in recent years due to development activities, water storage practices.[6-9]

Dengue is caused by the infection of dengue virus, a flavivirus in the family of Togaviridae. There are four known virus serotypes (DEN 1, DEN 2, DEN 3, and DEN 4).[1,10]

To tackle increasing dengue cases in urban, peri-urban and rural areas because of expanding urbanization, deficient water and solid waste management, the emphasis is on avoidance of mosquito breeding conditions in homes, workplaces and minimizing the man-mosquito contact. Improved surveillance, case management and community participation, inter-sectoral collaboration, enactment and enforcement of civic bye laws and building bye laws are emphasized for this vector borne disease.

Looking at the cost-effectiveness of the preventive measures over the treatment charges for Dengue fever in private hospitals, there is an urgent need to bring about awareness in people regarding the preventive measures in controlling dengue fever. Thus the present study was taken up to assess the awareness and practice towards the prevention of dengue fever, which serve as an educational diagnosis of a population. This information helps programs set communication objectives linked to increased community engagement and demand for services and develop strategies appropriate for the social, cultural and political contexts of at-risk communities.

METHODS

The study was conducted in Kannamangala village, which is a field practice area of Vydehi Institute of Medical Sciences & Research Centre, Bangalore after Ethical clearance from the college.

Sample size and study participants

A total of 738 houses are in Kannamangala village. Each person from a house was interviewed (738) about the awareness and practice regarding dengue fever.

Interview schedule and data collection

Pretested semi-structured interview schedule was prepared in Kannada, which is the local language. Questionnaire consisted of four sections. Section I covered demographic information about respondents, section II was about knowledge regarding the symptoms, spread of dengue and also knowledge about mosquitoes. Section III covered about the preventive practices related to dengue and section IV was about source of information about dengue.

A written consent was taken from the participants. People were interviewed in the local language i.e., Kannada. Medico-Social workers conducted interviews from the month of July 2014-December 2014.

Statistical analysis

Data were entered in Microsoft Excel spreadsheet and analyzed using SPSS version 21.0. The results were recorded as frequencies and 95% confidence intervals. Chi-square test was used to compare proportions.

RESULTS

A total of 738 individuals were interviewed. A total of 606 (82.1%; 606/738) respondents were females. Mean age of participants was 41.3 years (SD±17.41). About 16.7% of the respondents were illiterate and 7.2% were graduates. 62.5% of the respondents were housewives. (Table 1).

Table 1: Key socio-demographic profile of the study participants (n = 738).

Socio-demographic variables	N (%)
Gender	
Male	132 (17.9)
Female	606 (82.1)
Age (years)	41.3±17.4
Education	
Illiterate	123 (16.7)
Primary school	174 (23.6)
Middle school	110 (14.9)
High school	256 (34.7)
Graduate	53 (7.2)
Degree	22 (3.0)
Standard of living index	
Low	18 (2.4)
Medium	175 (23.7)
High	545 (73.8)

Among 738 subjects 514 (69.6%) had knowledge about dengue fever and 615 (83.3%) were literates. A significant association was observed between knowledge regarding dengue and education status of the individual (Table 2). Among 738 subjects, 514 (69.6%) subjects heard about dengue and 439 (59.5%) of the respondents said Dengue is a serious illness. 293 (39.7%) respondents said they are at risk of getting Dengue.

Overall 508 (68.8%) subjects said it is transmitted through mosquito bite and only 63(8.5%) knew the name

of the vector. Around 84 (11.4%) said the mosquito is a day biter and 305 (41.4%) said it bites in both day and night. 213 (28.9%) of the respondents said it breeds in pots, cans and water container, 423 (57.3%) said in ponds and river.

Table 2: Knowledge regarding dengue fever according to education.

Literacy status of subjects	Knowledge regarding dengue fever		Total
	Yes	No	
	Number (%)	Number (%)	Number (%)
Illiterate	45 (36.6)	78 (63.4)	123 (16.6)
Primary-high school	420 (77.8)	120 (22.2)	540 (73.2)
Diploma-degree	49 (69.4)	26 (30.6)	75 (10.2)
Total	514 (69.6)	224 (30.4)	738 (100)

χ^2 =81.2, DF=2, P=0.001.

The major sources of information regarding dengue were television/radio 363 (49.2%), health personnel 114 (15.4%), newspaper/magazine 173 (23.4%) and from past illness of dengue 67 (9.1%) (Table 3).

Table 3: Source of information regarding dengue fever.

Source of information	Number (Percentage)
Television / radio	363 (49.2%)
Newspaper/ magazine	173(23.4%)
Health personnel	114 (15.4%)
Relatives/ friends	104 (14.1%)
Past illness of dengue	67 (9.1%)

*Multiple responses (n= 738).

459 (62.2%) out of 738 subjects knew that dengue could be prevented. A significant association was observed between the knowledge regarding prevention of dengue and education status of the subjects (Table 4).

Table 4: Knowledge regarding prevention of dengue fever to education.

Literacy status of Subjects	Knowledge regarding prevention dengue fever		Total
	Yes	No	
	Number (%)	Number (%)	Number (%)
Illiterate	62 (50.4)	61 (49.6)	123 (16.6)
Primary-high school	340 (63.0)	200 (37.0)	540 (73.2)
Diploma-degree	57 (76)	18 (24)	75 (10.2)
Total	459 (62.2)	279 (37.8)	738 (100)

χ^2 =13.5, DF=2, P=0.001.

Common preventive practices used in the community were using mosquito repellents 407 (55.14%), mosquito nets 158 (21.4%), removal of standing water 128 (17.34%).

Out of 738 subjects 712 (96.5%) of the respondents said they covered the storage container when not in use. When it comes to changing of water 333 (45.2%) said they do it daily, 101 (13.7%) on alternate days and 113 (15.3%) once a week (Table 5).

Table 5: Distribution of respondents as per their practices of mosquito control.

Method of prevention*	Number (%)
Mosquito repellents	407 (55.14%)
Mosquito nets	158 (21.4%)
Removal of standing water	128 (17.34%)
Changing of water in container	
Daily	333 (45.2%)
Alternate days	101 (13.7%)
Once a week	113 (15.3%)

*Multiple responses (n= 738)

DISCUSSION

The present study was able to document the knowledge and practices regarding the dengue. In present study the mean age of subjects was 41.3 years (SD±17.4 years) and 123 (16.7%) were illiterates. In similar study by Chinnakali et al mean age of participants was 33.8 years and about 14% of the respondents were illiterates.[11]

In present study out of 738 subjects 514 (69.6%) had heard about dengue disease and 459 (62.2%) knew it could be prevented, though 30.4% did not have knowledge. However, Kumar et al in Tamil Nadu in which only 34.5% of the public was aware of dengue fever.[12]

In present study significant association was found between literacy status and knowledge regarding dengue fever and its prevention. In similar study by Acharya et al 90% respondents were aware of dengue and a statistical significance was found between literacy status and knowledge about dengue fever.[13]

Regarding source of information 49.2% respondents cited the media, 23.4% respondents cited newspaper. A similar study by Taksande A et al and Matta S et al reported higher observation for media 59.7% and 57% respectively.[14,15]

In present study, 55% of the subjects used mosquito repellent as the major mosquito preventive measure. In a similar study by Naik PR et al mosquito repellent use was 46.57% and in a study by Matta S et al 77% used mosquito repellent.[15,16]

CONCLUSION

This study clearly shows, there is lack of awareness among the people about the dengue preventive measures. Focus should be more on educating people about the preventive measures through health workers and mass media. Behaviour change communication sessions has to be conducted regularly in rural areas regarding mosquito control measures.

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