

Original Research Article

Knowledge, awareness and practices regarding dengue fever

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ABSTRACT

Background: The incidence of dengue infections continues to rise worldwide. Good knowledge, attitudes, and practices (KAP) among the public are required to successfully prevent or minimize dengue outbreaks. However, very little is known about the public's KAP on dengue and its prevention. This study was conducted to assess the level of knowledge, attitudes and practices regarding dengue fever in.

Methods: A cross-sectional study was conducted during November to December 2017. 200 residents were surveyed. A structured pre-tested questionnaire was used to collect data. The data was analyzed and statistics taken out.

Results: In our study, out of 200 respondents, majority i.e. 170 (85%) of the respondents had heard about dengue. 162 (81%) knew that mosquito bite is the cause of dengue while 80 (40%) were aware that dengue mosquito breeds in clean standing water. Fever was the most consistent response in 188 (94%) respondents followed by GIT symptoms in 74 (37%), rash in 30 (15%), headache and body ache in 12 (6%). Majority i.e. 172 (86%) of the respondents relying on mosquito mats and vaporizers. 64 (32%) respondents were using mosquito net, 62 (31%) had net on the windows, 42 (21%) were using sprays while only 10 (5%) were using repellent cream.

Conclusions: We found sufficient knowledge on dengue. Also, preventive practices regarding dengue were consistent with the knowledge about these practices. Preventive measures mainly focused towards protection from mosquito bites.

Keywords: Dengue, Mosquito bite, Fever

INTRODUCTION

Dengue is the most prevalent mosquito-borne infection with two billion of the world's population at risk and 100 million infections every year.¹

The term dengue fever came into use after 1828. Mortality of dengue fever is 1-5% without treatment and less than 1% with treatment. Dengue hemorrhagic fever and dengue shock syndrome have a mortality of 26%.²

In the Asian sub-continent, WHO has declared dengue and dengue hemorrhagic fever as endemic disease. At present, dengue is endemic in 112 countries of the world.³

Dengue fever is a viral infection transmitted by bites of *Aedes aegypti* and *Aedes albopictus* mosquito. It causes a severe flu-like illness. It sometimes causes a fatal complication called severe dengue.⁴

Dengue fever is caused by any of four serotypes called as DENV 1, DENV 2, DENV 3, and DENV 4. Symptoms of dengue fever are sudden onset of high grade fever, severe headache, backache, intense pain in joints and muscles, retro-orbital pain, nausea and vomiting and a generalized erythematous rash. Rash begins 4-7 days after the mosquito bite and typically lasts 3-10 days.⁵

Dengue fever is an acute febrile illness caused by dengue virus. It is characterized by biphasic fever, myalgia, arthralgia, rash and leucopenia. Dengue hemorrhagic fever (DHF) is characterized by hemo-concentration, hemostasis abnormality and in severe cases by a fluid & protein losing shock syndrome (dengue shock syndrome, DSS).⁶

The clinical presentation in the early febrile phase of illness is an undifferentiated fever. Most common symptoms are fever, followed by headache, myalgia and arthralgia, nausea and vomiting. Other symptoms are rash, petechiae, bleeding tendencies, and neurological deficits. Abdominal pain and tenderness, gastrointestinal bleed, jaundice, hepatomegaly and ascites are predictors of the need for intensive care.⁷

The World Health Organization and centers for disease control and prevention recommends extensive community educational campaigns. These should aim at reducing vector breeding sites to be an effective way of dengue prevention.⁸

Community education can be more effective in reducing dengue vector breeding sites than chemicals alone.⁹

Bentham claimed that people with higher knowledge on dengue reported a higher use of preventive measure than people with low knowledge.¹⁰

Preventive measures for dengue fever are mosquito bed net, repellent cream on the skin, wearing long sleeves and pants for additional protection, window and door screens and air-conditioning.¹¹

Aims and objectives

- To assess the level of knowledge about cause of dengue, its spread and symptoms.
- To assess the practices about prevention of dengue.

METHODS

A cross-sectional study assessing the knowledge, attitudes and practices regarding dengue was performed among residents of Mathura district, Uttar Pradesh.

Residents of Mathura aged 25 years or above during the period November to December 2017, formed the sample population. Using convenience sampling, 200 study participants were approached and verbal consent for a face-to-face interview was sought.

Inclusion criteria

Inclusion criteria were residents aged 25 years and <60 years; residents who are married.

Exclusion criteria

Exclusion criteria were residents <25 years and >60 years of age; residents who failed to respond to all questions or who left before completing the interview; all medical personnel including doctors, nurses and medical students

Face-to-face interview was based on a pretested questionnaire

It included three essential questions: 1) mode of spread of dengue, 2) common symptoms of dengue, and 3) preventive measures against the disease.

Questionnaire

- Name
- Age
- Education
- Socio-economic status
- Awareness of dengue infection
- Cause of dengue
- Symptoms of dengue
- Practices to prevent dengue-Mosquito net, coil, repellent, cream, window net.

Data was collected in Microsoft excel sheet and analyzed. Statistical analysis was done in percentages.

RESULTS

In our study, out of 200 respondents, 126 (63%) were between 25-40 years while 74 (37%) were between 41-60 years. In our study, out of 200 respondents, 68 (34%) were males while 132 (66%) were females.

Table 1: Age and sex distribution.

	No. of respondents	Percentage (%)
Age		
25-40 years	126	63
41-60 years	74	37
Sex		
Males	68	34
Females	132	66
Total	200	100

In our study, out of 200 respondents, 80 (40%) were graduates, 42 (21%) were postgraduates, 32 (16%) had their education till 12th standard, 20 (10%) were illiterate, 20 (10%) had their education till 10th standard while 6 (3%) respondents had their education of primary level (Table 2).

In our study, out of 200 respondents, 84 (42%) were from lower middle class, 58 (29%) were from upper middle class while 58 (29%) were from upper lower class. There

were no respondents from upper class & lower class (Table 3).

Table 2: Education.

Education	No. of respondents	Percentage (%)
Illiterate	20	10
Primary	6	3
High school	20	10
12 th std	32	16
Graduation	80	40
Post-graduation	42	21
Total	200	100

Table 3: Socio-economic status.

Socio-economic status	No. of respondents	Percentage (%)
Upper (Class I)	0	0
Upper middle (Class II)	58	29
Lower middle (Class III)	84	42
Upper lower (Class IV)	58	29
Lower (Class V)	0	0
Total	200	100

Table 4: Awareness of dengue and its transmission.

Awareness of dengue and its transmission	No. of respondents	Percentage (%)
Awareness of dengue	170	85
Mosquito bite is the cause	162	81
Caused by stagnant water	80	40

In our study, out of 200 respondents, majority i.e. 170 (85%) of the respondents had heard about dengue.

162 (81%) knew that mosquito bite is the cause of dengue while 80 (40%) were aware that dengue mosquito breeds in clean standing water.

Table 5: Awareness of dengue symptoms.

Awareness of dengue symptoms	No. of respondents	Percentage (%)
Fever	188	94
Rash	30	15
Nausea, vomiting and pain in abdomen	74	37
Headache, body ache	12	6
Other	52	26

In our study, out of 200 respondents, fever was the most consistent response in 188 (94%) respondents followed by GIT symptoms in 74 (37%), rash in 30 (15%),

headache and body ache in 12 (6%). Other than these symptoms were known to 52 (26%) respondents.

Table 6: Preventive practices regarding dengue.

Preventive practices regarding dengue	No. of respondents	Percentage (%)
Mosquito net	64	32
Mosquito mats/ vaporizers	172	86
Repellent creams	10	5
Spray	42	21
Window net	62	31

Preventive practices regarding dengue were consistent with the knowledge about these practices, with majority i.e. 172 (86%) of the respondents relying on mosquito mats and vaporizers. 64 (32%) respondents were using mosquito net, 62 (31%) had net on the windows, 42 (21%) were using sprays while only 10 (5%) were using repellent cream.

DISCUSSION

This study was carried out by selecting the respondents randomly. In our study, out of 200 respondents, majority i.e. 126 (63%) were between 25-40 years while 74 (37%) were between 41-60 years (Table 1).

In our study, out of 200 respondents, 68 (34%) were males while 132 (66%) were females (Table 1). Bota et al found that out of 450 students from three universities participated, 46.5% were male and 53.5% female.¹² It was near similar to our study.

Bentham et al in Thailand reported a significant reduction of dengue vectors and dengue hemorrhagic fever cases in areas having clean-up campaigns before and during rainy seasons.¹⁰

Bota et al found that ages ranged from 17-29 years. This was contrast to our study where majority (63%) were between 25-40 years¹²

In our study, out of 200 respondents, 80 (40%) were graduates, 42 (21%) were postgraduates, 32 (16%) had their education till 12th standard, 20 (10%) were illiterate, 20 (10%) had their education till 10th standard while 6 (3%) respondents had their education of primary level.

In our study, out of 200 respondents, 84 (42%) were from lower middle class, 58 (29%) were from upper middle class while 58 (29%) were from upper lower class. There were no respondents from upper class and lower class.

In our study, out of 200 respondents, majority i.e.170 (85%) of the respondents had heard about dengue. 162 (81%) knew that mosquito bite is the cause of dengue while 80 (40%) were aware that dengue mosquito breeds in clean standing water.

Naing et al found that almost all i.e. 95% had heard about dengue and half (50.5%) had misconceptions that *Aedes* can breed in dirty water.¹³ It was similar to our study.

In our study, out of 200 respondents, fever was the most consistent response in 188 (94%) respondents followed by GIT symptoms in 74 (37%), rash in 30 (15%), headache and body ache in 12 (6%). Other than these symptoms were known to 52 (26%) respondents.

Begonia et al found that 61.4% of the respondents had good knowledge on causes, signs and symptoms, mode of transmission, and preventive measures about dengue. 52.6% respondents used dengue preventive measures such as fans, mosquito coil (70.90%), and bed nets (59.91%) to reduce mosquitoes while only about one third utilized insecticides sprays (31.58%) and screen windows (36.07%).¹⁴ It was similar to our study.

Itrat et al found that 89.9% of individuals had heard of dengue fever. Sufficient knowledge about dengue was found in 38.5%. Literate individuals were relatively more well-informed about dengue fever as compared to the illiterate people ($p < 0.001$). 58.6% of participants reported *Aedes* mosquito as a vector of dengue virus. Preventive measures were found to be predominantly focused towards prevention of mosquito bites (78.3%) rather than eradication of mosquito population (17.3%). Use of anti-mosquito spray was the most prevalent (48.1%) preventive measure.¹⁵

Itrat et al found that one-half (51.1%) of those interrogated were knowing that the dengue mosquito breeds in clean standing water.¹⁶ It was similar to our study.

In our study, preventive practices regarding dengue were consistent with the knowledge about these practices, with majority i.e. 172 (86%) of the respondents relying on mosquito mats and vaporizers. 64 (32%) respondents were using mosquito net, 62 (31%) had net on the windows, 42 (21%) were using sprays while only 10 (5%) were using repellent cream.

Uematsu et al found that high education group had better practices than the low education group.¹⁶

CONCLUSION

We found sufficient knowledge in our sample population based on overall knowledge on dengue. Also, preventive practices regarding dengue were consistent with the knowledge about these practices.

Preventive measures mainly focused towards protection from mosquito bites. There is a need for a nationally representative survey to assess the knowledge and attitudes regarding dengue and any misconception in the general population.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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