

## Study on Knowledge and Practice Regarding Dengue among Medical Students in Kolkata, West Bengal

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### ABSTRACT

**Background:** Dengue is an acute arboviral disease caused by dengue virus. The incidence of dengue has increased several folds in recent years. It is usually not fatal, but sometimes with hemorrhagic complication it can cause death. To organise any program for behaviour change it is very important to know the current knowledge and practice of the people about dengue.

**Method:** a cross sectional descriptive study was carried out among the students of a medical college in Kolkata, India. Data were collected with the help of pre designed structured questionnaire. Data on demographic characteristics of the students and their knowledge and practices were collected.

**Result:** Majority knew correctly about causative agent, season of occurrence, breeding place of vector mosquito, reservoir of infection, case fatality, recurrence of infection and non availability of specific treatment. But, they had misconception about mode of transmission in dengue. They also have good knowledge about different preventive measures. Their own practice was not satisfactory considering their knowledge. But, practice score was better in student exposed to dengue.

**Conclusion:** The medical students had good knowledge but their knowledge was not translated into proper action. There is need for behaviour change communication for prevention and control of dengue in the community.

**Key Words:** Dengue, knowledge, Practice, medical students

### INTRODUCTION

Dengue is an acute arboviral disease caused by dengue virus. It usually causes

high fever, headache, body ache, severe joint and muscular pain. It is usually not fatal, but sometimes with hemorrhagic complication it can cause death. <sup>[1]</sup> The incidence of dengue has increased several folds in recent years. Almost half of the world's population is at risk. Severe dengue (previously known as dengue hemorrhagic fever) was first recognized in the 1950s during dengue epidemics in the Philippines and Thailand. Today it affects Asian and Latin American countries and has become a leading cause of hospitalization and death among children and adults in these regions. <sup>[2]</sup> In WHO South East Asia region countries have been categorized according to dengue situation. Bangladesh, India, Indonesia, Maldives, Myanmar, Sri-Lanka, Thailand and Timor -leste are in Category A. <sup>[3]</sup> In 2017, 188401 dengue cases and 325 deaths was reported to government of India. <sup>[4]</sup> There is no specific treatment for dengue. Early detection of complication and prompt referral to hospital can reduce death in severe dengue.

It is transmitted to human by bite of infected female aedes mosquito. Rapid urbanization, Life style changes and problem in water management has resulted in increased breeding of vector mosquito. No routine vaccine is available at present in India. So, prevention of mosquito breeding, personal protection from mosquito bite is the mainstay of prevention of this disease. To organise any program for behaviour change it is very important to know the current knowledge and practice of the

people about dengue. This for far more important for the medical student community as they are the future leader of the community to shape the community behavior.

In this background the present study was undertaken to study the knowledge and practice regarding dengue among undergraduate medical student in a medical college of Kolkata, India.

## MATERIALS AND METHODS

This descriptive observational study, cross sectional in design was undertaken among 4<sup>th</sup> semester student in a medical college of Kolkata. A pre designed pre tested schedule was used to collect data from the participants. The schedule was prepared after extensive review of literature and was validated by two experts before pretesting on a similar study subjects. There are 16 questions regarding assessment of knowledge of dengue awareness, its transmission, methods of prevention. Similarly there were six questions regarding practices towards its prevention. Each question has one mark. Those with wrong answers or no response were given zero marks. The students were briefed about the purpose of the study and questionnaire was handed over to them. Confidentiality and anonymity of the response was maintained. After filling the questionnaire they submitted it to the researchers.

**Statistical method:** All the data were entered into MS excel spreadsheet. Frequencies and Percentages were calculated. Z test was performed for difference between two means. P value < 0.05 was considered significant.

## RESULTS

Total 159 students participated in the study. Majority of them are male (65.41%), residing in hostel or Paying guest accommodation (65.41%), hailing from urban area (77.36%). Among the students,

8.18% suffered from dengue and in 37.47% cases their roommate or family members have suffered from dengue. Among the affected, majority (61.97%) was hospitalized and rest was treated at home. Majority of the infection occurred in September to November.

**Table1. Correct knowledge of the students regarding Dengue (N=159)**

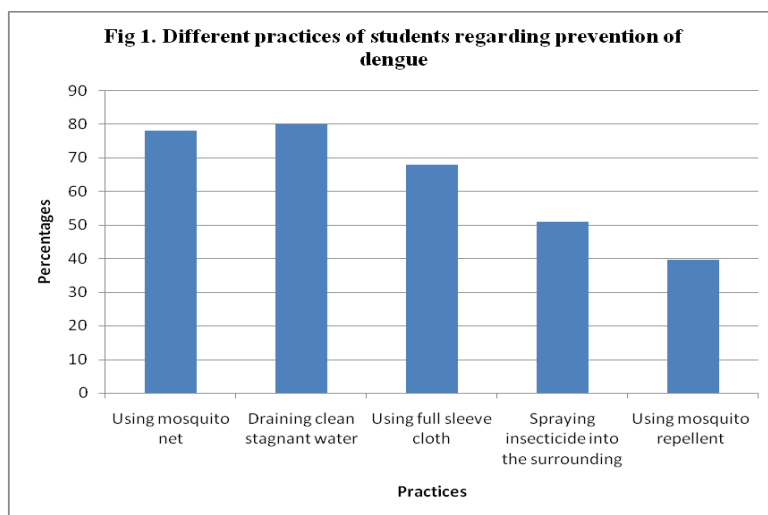
Variable	Number	Percentages
Causative agent	142	89.31
Season of occurrence	109	68.55
Mode of transmission	46	28.93
Breeding Place of mosquito vector	99	62.26
Reservoir of infection	102	64.15
Case fatality	99	62.26
Availability of specific treatment	149	93.71
Recurrence of infection	145	91.19

They have good knowledge about different aspect of dengue. Majority knew correctly about causative agent, season of occurrence, breeding place for vector mosquito, reservoir of infection, case fatality, recurrence of infection and non availability of specific treatment. But, they had misconception about mode of transmission in dengue. Only 28.93% had correct knowledge about mode of transmission (Table1). Apart from vector borne transmission they also stated many other mode of transmission. Half of the students knew correctly the main manifestation of dengue.

**Table 2. Correct knowledge of the students about preventive practices (N=159)**

Preventive practices	Number	Percentages
Use of mosquito net	147	92.45
Mosquito repellent	150	94.34
No water collection	148	93.08
No garbage, waste accumulation	123	79.36
Fully covering one body	128	80.50
Vaccine	102	64.15
Applying mosquito repellent cream	146	91.82

They also have sound knowledge about different preventive measures (table 2). Majority had correct knowledge about control of mosquito breeding, prevention of mosquito bite, vaccine of dengue.



Practices of the student of different preventive measure for dengue was studied (Fig.1). Among the preventive measure three fourth used mosquito net. But one fourth did not use mosquito net. Reasons for not using mosquito net were feeling of suffocation, using other mosquito repellent, laziness, not considered mosquito a problem and non availability of mosquito net etc. Vector mosquito of dengue usually bite at day time, but only 20.13% used the mosquito net during day time.

They have acquired the knowledge about dengue from different sources and they had acquired it from more than one source. Important sources of their knowledge were Internet, Television, book, health workers, seminar, even radio (Table 3).

**Table 3: Distribution of students according to sources of knowledge about dengue (N=159).**

Sources	Number	Percentage
Internet	116	72.96
TV	107	67.30
Newspaper	107	67.30
Health workers	86	54.09
Book	68	43.77
Seminar	50	31.45
Radio	36	22.64
others	10	06.3

There were multiple responses Knowledge score was almost similar in students who themselves or their roommate or family members suffered from dengue compared to student not exposed to dengue (table 4) and difference was not statistically significant ( $P > 0.05$ ). But, practice score was better in exposed group compared to non exposed and difference was statistically significant ( $P < 0.05$ ).

**Table 4. Knowledge and practice score according to their exposure.**

Score	Student exposed to dengue $n_1=71$	Student not exposed to dengue $n_2=88$
Knowledge score Mean (max attainable score 16) SD	13.39 2.4	13.37 1.29
Practice score Mean (max attainable score 5) SD	3.17 1.29	2.4 1.24

## DISCUSSION

Dengue is acute viral diseases which may sometimes become fatal. At present there is no specific treatment for dengue. There is also no licensed vaccine for dengue in India. So, prevention of the infection by preventing man mosquito contact is the important measure to control the disease. Dengue is not restricted to India; many

countries throughout the globe are affected by this disease. KAP study is important to take public health action in disease control. Many such studies have been conducted in many parts of the world to understand the knowledge and practice of community. This knowledge helps in programme formulation and its effective implementation. Present study showed that a segment of medical

students also had incorrect knowledge about dengue. Large proportion of students had incorrect knowledge about mode of transmission of disease. They had good knowledge about mode of prevention of this infection. Chinnakali et al reported good knowledge in their study in north India among persons visiting a tertiary care hospital. [5] Study among Vietnamese university student showed that they had good knowledge about disease transmission, and good practice to prevent the diseases. [6] In Sepang, Malaysia only half of the study population had good knowledge and practice. [7] In another study majority of a Malaysian university students had moderate level of knowledge, attitude, and practice toward dengue fever. [8] In a study among factory workers in Punjab almost everyone was aware that dengue was caused by bite of mosquito. [9] Similar result was reported from field practice area of a medical college in Chennai. [10] But in a dengue affected community, community members did not have adequate knowledge. [11] But community member in urban field practice area in a Pune medical college had better knowledge compared to rural community members. [12] This is expected as dengue was a disease of the urban area.

Dengue mosquito is a day time biter; this knowledge is important to take action to prevent mosquito bite in day time. But in study among Chennai slum population only 2% were aware that Dengue vector mosquito is day time biter. [13]

Good knowledge was not always translated into good practices. In the present study there was difference between their knowledge about mode of prevention and their own practices. In the absence of effective vaccine or specific therapy, mosquito control is the most effective way to control dengue. For mosquito control more than one measure are usually advocated. Preventing mosquito breeding, killing the larva or adult mosquito and preventing mosquito bite by using mosquito net or mosquito repellents or applying mosquito repellent on the body surface are

various measures to prevent infection. In the present study all the measures were adopted by the study population. Use of mosquito net, draining stagnant water and using full sleeve dress were used by majority of the students. Insecticide or repellent use was not that popular. Good knowledge did not always translated into good practices. In Pune study though urban people had better knowledge, there is no significant different in practices between urban and rural population. [12] Bednet was not very popular for personal protection for mosquito bite in many places. [10,14] Other studies also reported mismatch between knowledge and practice. [5,9]

In the present study internet, television and newspaper were major source of knowledge. In other studies in general population television and newspaper were important sources. [5,14] This knowledge is very important in choosing the appropriate media for awareness generation.

## CONCLUSION

The medical students had good knowledge but their knowledge was not always translated into proper action. Dengue Preventive practice was better in students who themselves or whose roommate or family members had suffered from dengue. There is need for behaviour change communication for proper control of dengue in the community.

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