



## Original Article

# Knowledge and Awareness regarding Dengue Fever among the Adult Population in a Sub-urban area near Dhaka City

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## Abstract


**Background:** Dengue Fever (DF) is a preventable vector-borne viral disease transmitted by Aedes mosquito. It is a major public health problem in Bangladesh, especially in the urban and suburban regions. Since the first-detected epidemic of dengue in Bangladesh in 2000, around 49,000 people suffered from the disease. Most of the patients were from Dhaka or its neighboring districts. **Objective:** The study was carried out with the objective to assess the level of knowledge and awareness regarding DF among adult people of a selected sub-urban community. **Methodology:** The study was cross-sectional descriptive in nature. It was carried out at Keraniganj Upazilla, Dhaka. Data were collected by face-to-face interview with a semi-structured questionnaire. A total 540 adult persons were included in the study. **Results:** Total 9 questions were asked to assess the knowledge of DF. It was found that 425 (78.7%) of the respondents did not know about the causative agent, but 428 (79.3%) of the respondents knew that mosquito or Aedes mosquito is the vector of the disease. Some 287 (53.1%) of the respondents did not know about the biting time of the mosquito, but 318 (58.9%) of the respondents correctly knew about the breeding places of Aedes mosquito. Again, some 288 (53.3%) of the respondents did not know about the clinical features of dengue and 314 (58.1%) of them knew about preventive measures of DF. It was revealed that 186 (34.4%) respondents had poor knowledge about dengue who answered 0 to 3 questions correctly, 262 (48.6%) respondents had some knowledge answering 4 to 6 questions correctly and only 92 (17%) respondents had good knowledge about dengue and answered 7 to 9 questions correctly out of total 9 questions. **Conclusion:** The findings of the study indicate that knowledge regarding DF is very poor among the community people. Therefore, awareness building strategy directed towards bringing up a significant change in the knowledge among the people is essential.

**Keywords:** Acromion process, Morphometry, Acromio-coracoid distance, Acromio-glenoid distance.

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## Introduction

Bangladesh is situated in the tropical and sub-tropical regions of the Southeast Asia and like other countries of the region has become a suitable habitat for the dengue vector and increased transmission of the disease. Only sporadic cases of the disease were reported from Dhaka and other parts of the country before 2000.<sup>1</sup> A sudden outbreak of Dengue occurred in 2000, causing a serious public health concern when around 5,551 cases and 93 deaths were reported in the country.<sup>2</sup> During the outbreaks of the disease from 2000–2017, both types of the Aedes mosquito vectors (*A. aegypti* and *A. albopictus*) were identified in Bangladesh.<sup>3</sup> The re-emergence of dengue and the recent emergence of Chikungunya due to

chikungunya virus, both spread by the Aedes mosquitoes, are very worrying and have created a huge burden of morbidity and mortality with insufficient allocation of resources.<sup>4</sup>

It is important to investigate the knowledge about a preventable disease like dengue as prevention measures are the key point to control such a disease and knowledge level of general people are directly linked to the effectiveness of a control programs. Knowledge of disease agent, vector, breeding places of the vector, clinical features, preventive measures and treatment methods is fundamental information about dengue fever (DF) which is necessary to collect and analyze.

Therefore, the objective of this study was to assess the level

of knowledge about DF among the sub-urban people in Bangladesh which shall in turn facilitate understanding the situation and conducting any preventive measure against the disease.

**Methodology**

This cross-sectional descriptive study was conducted from December 2018 to March 2019 in the sub-urban region of Keraniganj upazila, under Dhaka district. Convenience sampling technique was followed to select the 540 adult respondents from Ainta and Konda villages of Keraniganj Upazila. After taking verbal consent from the respondents following introducing and informing the study purpose and objectives, data were collected by face-to-face interview.

A semi-structured questionnaire, based on socio-economic characteristics and dengue fever related knowledge measuring questions was used for this purpose. Statistical analyses were performed using the 21st version of SPSS® software. Before collection of data, verbal permission was taken from the respondents by informing them the purpose, procedure, expected duration, nature, and anticipated physical and psychological risks and benefits of participation. Confidentiality of data and privacy of the respondents were maintained strictly.

**Results**

Among the respondents, 377 (69.8%) were female and 163 (30.2%) were male. Mean age of the respondents was 37.83 (SD ±15.4) years ranging from 18 to 87 years, among whom majority (151, 28.1%) were between 18 and 25 years. Regarding religion of the respondents, almost all (536, 99.3%) were Muslims, 210 (38.9%) had 1 to 8 years of schooling, 348 (64.4%) were housewives, 464 (85.9%) were married and 345 (63.9%) respondents were from nuclear families. Average monthly family income of the respondents was Tk. 20,998 (SD ±14,369). It was also revealed that, 373 (69.1%) respondents had aedes mosquito breeding places around their households. (Table 1)

Total 9 questions were asked to assess the knowledge level about dengue fever (DF). It was found that 526 (97.4%) of the respondents heard the name of dengue, 425 (78.7%) did not know about the causative agent and 428 (79.3%) of them knew that mosquito or aedes mosquito is the vector of the disease. Some 287 (53.1%) of the respondents did not know about the biting time of aedes mosquito, and 318 (58.9%) correctly knew about the breeding places of aedes mosquito. A total of 288 (53.3%) of the respondents did not know the signs and symptoms of dengue, whereas, 468 (86.7%) of the respondents did not know the complications of DF. Majority (461, 85.4%) of the respondents gave incorrect answers about the persons who may suffer more severe complications of dengue and 314 (58.1%) of the respondents knew about prevention measures of DF.

Regarding overall knowledge level assessment, it was found that 186 (34.4%) respondents had poor knowledge about dengue, who answered 0 to 3 questions correctly, 262 (48.6%) had some knowledge answering 4 to 6 questions correctly and only 92

(17%) had good knowledge about dengue who answered 7 to 9 questions correctly out of 9 knowledge-assessing questions.

Table 1: Socio-demographic characteristics of the respondents (n = 540)

Name of variables	Frequency	Percentage	Mean ±SD
<b>Sex</b>			
Female	377	69.8	
Male	163	30.2	
<b>Age in years</b>			
18-25	151	28.0	37.8 (±15.4)
26-35	143	26.5	
36-45	101	18.7	
46-55	63	11.6	
55+	82	15.2	
<b>Religion</b>			
Muslim	536	99.3	
Hindu	4	0.7	
<b>Education</b>			
<1 yr schooling	119	22.0	
1 to 8 yrs schooling	210	38.9	
9 yrs to SSC	188	34.8	
Bachelors	21	3.9	
Masters	2	0.4	
<b>Occupation</b>			
Unemployed	28	5.2	
Housewives	348	64.4	
Job holders	39	7.2	
Businessmen	82	15.2	
Day laborers	19	3.5	
Students	22	4.1	
Doctor/Engineer/Teacher	2	0.4	
<b>Marital status</b>			
Single	47	8.7	
Married	464	85.9	
Divorced	2	0.4	
Widow/widower	23	4.3	
Separated	4	0.7	
<b>Family type</b>			
Nuclear	345	63.9	
Joint	195	35.1	
<b>Monthly family income (Taka)</b>			
0-10,000	126	23.3	20,998.1
10,001-25,000	288	53.3	(±14,369.3)
25,001-35,000	78	14.4	
>35,000	48	8.9	
<b>Aedes mosquito breeding places around housing</b>			
Present	373	69.1	
Absent	167	30.9	

Table 2: Overall knowledge level

Category	Frequency	Percent
Poor knowledge (0—3 correct answers)	186	34.4
Some knowledge (4—6 correct answers)	262	48.6
Good knowledge (7—9 correct answers)	92	17.0
<b>Total</b>	<b>540</b>	<b>100</b>
Average number of correct answers	4.3 (SD ±2)	

## Discussion

Considering sociodemographic criteria of the respondents, it was found in the present study that majority (377, 69.81%) were male and the highest number of them were in the 18-25 years age group (151, 28.1%), followed by 26-35 years (143, 26.5%). A similar study conducted in India by Singh et al<sup>5</sup> found that 318 (59%) of the respondents were male and majority of them were young adults (20-40 years) and literate.

In our study, a total of 9 questions were asked to assess the knowledge of dengue fever (DF). It was found in this study that majority (425, 78.7%) of the respondents did not know about the causative agent; but surprisingly 428 (79.3%) of the respondents knew that mosquito or aedes mosquito is the vector of the disease. Majority (287, 53.1%) of the respondents did not know about the biting time of aedes mosquito; but 318 (58.9%) of the respondents correctly knew about the breeding places of aedes mosquito. Some 288 (53.3%) of the respondents did not know about the clinical features of dengue and 314 (58.1%) of the respondents knew about preventive measures of DF.

A study conducted by Sharmin et al<sup>6</sup> found that participants had high levels of knowledge regarding the transmission of dengue, Aedes breeding, and biting prevention methods. Another study conducted by Sharmin et al<sup>7</sup> found that majority of the respondents had possible breeding site for Aedes mosquitoes in their compound and practiced good habit in preventing the Aedes mosquitoes from breed. A study conducted by Karim et al<sup>8</sup> found interviewing 195 individuals that some 7% were illiterate and 18% had a college degree. Some 91% individuals knew mosquito as the vector, 32% identified clear stagnant water as the breeding place, while 22% knew about bleeding manifestations. Another 71% felt dengue as a severe disease and 84% had a positive attitude towards consulting a doctor for the illness. Sharmin et al<sup>9</sup> found in their study that out of 223 individuals interviewed, 93% identified fever as a cardinal symptom of DF. The knowledge about other signe symptoms of DF was low among participants. Only 17.5% knew that DF is transmitted by Aedes mosquitoes. The correct timing of biting was known by only 14% respondents. Despite low knowledge, the participants had good attitude and most of them reported good preventive practices against dengue prevention and control. Banu et al<sup>10</sup> found in their study that almost 68% of the individuals knew mosquito causes vector-borne diseases irrespective of their

educational status and majority of them were daily wagers. Amongst them more than 70% of them were using protective measures. Majority (38%) of them responded the probable breeding sites were plastic pots, muddy pots and vessels.

It was revealed in this study that 186 (34.4%) respondents had poor knowledge about dengue who answered 0 to 3 questions correctly, 262 (48.6%) respondents had some knowledge who answered 4 to 6 questions correctly and only 92 (17%) respondents had good knowledge about dengue who answered 7 to 9 questions correctly out of total 9 questions. A similar study conducted in India by Villanes et al<sup>11</sup> found more than 50% of the participants to have poor knowledge regarding DF. A study by Raheel et al<sup>12</sup> found that 53.2% of the respondents had good knowledge about dengue and it was found that the main source of information was from mass media (76.6%). However, only 43.4% were found to have good attitude towards dengue. Multiple Logistic Regression analysis showed there was no association between socio-demographic characteristics with the level of knowledge and attitude towards dengue. There was also found no association between knowledge of dengue and the attitude of the respondents towards dengue. Faisal et al<sup>13</sup> found in their study that more than half of the parents (54%) had good knowledge about signs, symptoms, and modes of transmission of dengue. Approximately 47% considered dengue as a serious but preventable disease in which they are vulnerable. Nevertheless, a majority (77%) did not use effective dengue preventive methods such as screening of homes and 51% did not use bed nets. Educational attainment (OR, 2.98; CI, 1.23–7.23) was positively associated with knowledge of dengue. There was no correlation between knowledge about dengue and preventive practices (p=0.34).

## Conclusion

The findings of the study indicate that knowledge regarding dengue fever is not satisfactory among the sub-urban community people. Therefore, awareness building strategy directed towards bringing up a significant change in the knowledge among the people regarding the causative agent, vector, mode of transmission, prevention & treatment are essential. In this regard, policy makers, community leaders, volunteers and environmental activists should plan & implement coordinated awareness building programs involving the general community people to combat the4 situations.

**Conflict of interest:** None declared

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