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Original Research Article

Study to explore the primary school student's knowledge, attitude and practice on dengue prevention in Rajshahi City

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ABSTRACT

Background: Bangladesh, which is in South Asia, has developed into an ideal environment for the dengue vector and its transmission. Effective community involvement is crucial for this on the ground. People's knowledge, understanding, and attitude towards this condition have a big impact on how much they participate. This study aimed of the study was to explore the primary school student's knowledge, attitude and practice on dengue prevention in Rajshahi City.
Methods: This descriptive cross-section study was carried out in Department of Communicable Diseases Control and the duration of the period for 6 months (July 2022 to December 2022). A total of 108 students were participated in the study. Students studying in primary schools in Rajshahi City both male and female were included in the study. Those who were not willing to participate were excluded from the study. Statistical analyses of the results were being obtained by using window-based Microsoft Excel and Statistical Packages for Social Sciences (SPSS-22), where required.
Results: In this study about 54% were male and 46% were female students. 86.1% respondents gathered knowledge from TV, 50.9% from teachers, and 13.9% from their parents. 66.42% said that dengue fever is transmitted from mosquito bite, 21.29% said that dengue fever is transmitted through the air, 1.9% said from blood. 50% had no knowledge about mosquitoes responsible for dengue fever. 95.47% Larva of Aedes Albopictus (containers) at schools and 86.11% at home. This study also found 88.87% Larva of Aedes Aegypti (containers) at schools and 84.26% at home. Among all the respondents 40% had sufficient knowledge and 60% had insufficient knowledge regarding dengue preventiont.
Conclusions: The study's findings demonstrated the significance of the students' basic knowledge of dengue and their living situations for the dengue education programme.

Keywords: Attitude, Dengue, Knowledge, Practice

INTRODUCTION

The most common human arboviral infection in the world is dengue, a mosquito-borne illness spread by the bites of Aedes mosquitoes, especially Aedes aegypti and Aedes albopictus.[1] An estimated 2.5 billion individuals worldwide are at risk for contracting dengue. 975 million of them people reside in tropical and subtropical nations.[2] It is estimated that 3.8 billion individuals living in 128

countries are at risk of contracting dengue. The WHO estimates that dengue causes roughly 20,000 deaths worldwide each year.[3,4] Most often, the least severe form of dengue fever (DF), severe dengue hemorrhagic fever (DHF), and dengue shock syndrome (DSS) are all caused by one of the four serotypes of the dengue virus (DENV-1, 2, 3, and 4).[5,6] South-East Asia is where the first dengue virus infection was discovered, and it is also where 52% of the world's dengue-at-risk population resides. Bangladesh, which is in South Asia, has developed into an ideal environment for the dengue vector and its transmission.[7] The first case of dengue fever was discovered in Bangladesh in 1964.[1] From 1964 until 1999, there were intermittent dengue cases and tiny outbreaks all around the nation, but they weren't formally documented.[8,9] In Bangladesh, a significant dengue outbreak occurred in 2000 that resulted in 5551 cases of illness and 93 fatalities.[10] In 2019, a catastrophic dengue outbreak in Bangladesh claimed 129 lives and had the highest reported incidence of infections (112 000 cases).[11] Numerous factors, including unchecked population increase, urbanization, deteriorating waste management systems, changes in the environment, and a lack of efficient vector control, have an impact on the incidence and spread of dengue.[12] It is also believed that water storage practices, especially in urban areas where water supplies are scarce, have a significant role in dengue epidemics.[13] Despite how dangerous it is, dengue is a disease that may be avoided. The sole option for stopping the spread of the dengue virus is to control the vector mosquito breeding areas since there is currently no vaccination available to do so.[14] Effective community involvement is crucial for this on the ground. People's knowledge, understanding, and attitude towards this condition have a big impact on how much they participate. But despite persistent difficulties in ensuring appropriate options for treatment and prevention, effective dengue prevention and control remain a pressing concern in Bangladesh today.[15,16] So, the aim of the study was to explore the primary school student's knowledge, attitude and practice on dengue prevention in Rajshahi City.

METHODS

This descriptive cross-section study was carried out in Department of Communicable Diseases Control and the duration of the period for 6 months (July 2022 to December 2022). This study wants to find the sample size with an absolute error/precision of 5% and type 1 error of 5%. Using the following formula for qualitative variables; Sample size = (1.96)2×0.15(1-0.15)/0.052 = 196 So this study needs at least 196 women for the study. But due to some limitations, we could not collect the calculated sample size. We calculated the remaining sample size by taking the sample size of 88 people and reducing it. A total of 108 students were participated in the study. Students studying in primary schools in Rajshahi City both male and female were included in the study. Those who were not willing to participate were excluded from the study. After taking consent and matching eligibility criteria, data were collected from students on variables of interest using the predesigned structured questionnaire by interview. Statistical analyses of the results were being obtained by using window-based Microsoft Excel and Statistical Packages for Social Sciences (SPSS-22), where required.

RESULTS

Figure 1 shows that 54% were male and 46% were female.

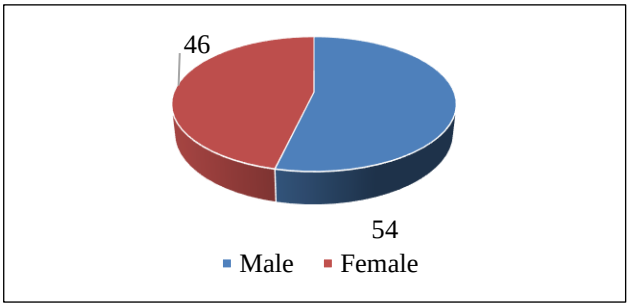

Figure 1: Distribution of the respondents by gender.

Table 1: Distribution of the respondents by source of information and knowledge about dengue fever transmission, mosquito responsible for dengue fever and mosquito active to bite.

Source of information	Number of patient	Percent
Parent	15	13.9
TV	93	86.1
Teacher	55	50.9
Dengue fever transmission		
Mosquito bite	71	66.4
Air borne	23	21.29
Blood transmission	2	1.9
Unknown	12	11.11
Mosquito responsible		
Aedes	15	13.9
Anopheles	26	24.1
Others	13	12.0
Unknown	54	50.0
Mosquito active to bite		
5-8 am	19	17.6
8-12am	19	17.6
1-4pm	8	7.4
4-8pm	15	13.9
Unknown	47	43.5

Table 1 shows that, 86.1% respondents gathered knowledge from TV, 50.9% from teachers, and 13.9% from their parents. The table also shows that, 66.42% said that dengue fever is transmitted from mosquito bite, 21.29% said that dengue fever is transmitted through the

air, 1.9% said from blood and 11.11% had no knowledge about it. Table shows that, 50% had no knowledge about mosquitoes responsible for dengue fever.13.9% said that Ades is responsible for dengue fever, 24.1% said that Anopheles is responsible for dengue fever. Table also shows that, 43.5% had no knowledge regarding the time of mosquito active to bite.17.6% said the time was from 5-8 am and 8-12 am respectively. 13.9% said the time was from 4-8 pm and 7.4% said it was from 1-4pm.

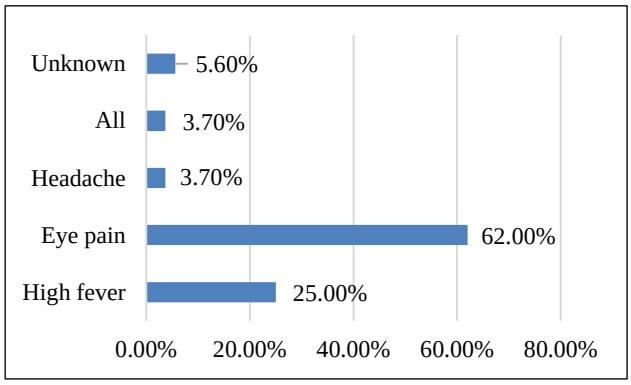

Figure 2: Distribution of the respondents by knowledge about symptoms of dengue fever.

Figure 2 shows that 62% said that eye pain is a symptom of dengue fever, 25% said about high fever, 3.70% said about headache and all of the above respectively. And 5.60% had no knowledge about it.

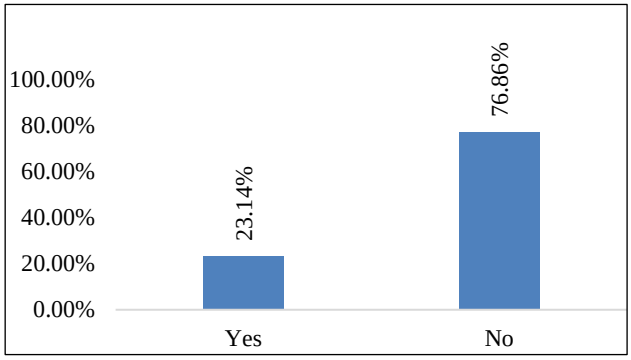

Figure 3: Distribution of the respondents by knowledge about dengue fever treatment.

Figure 3 shows that, 76.86% said that dengue patients should not take lot of liquid food and 23.14% was said positively about it.

Table 2 shows that, 52.8% suggested not to let water stagnate anywhere for dengue prevention. 16.7% suggested to sleep under mosquito net, 0.9% suggested to use repellents and reduce mosquito habit respectively. About 28.7% had no knowledge about dengue prevention. Table shows that, regarding breed indoors of dengue mosquito 45.4% said that dengue breed in flower pot, 12% said in fridge tray, 1.9% said in water container, 15% said all of above and 25% had no knowledge about it. Table shows that, regarding breed outdoors of dengue mosquito 35.18% said that dengue breed in flower plastic jar, 37% said in coconut shell, 18.51% said all of above and 12.03% had no knowledge about it.

Table 2: Distribution of the respondents by knowledge about prevent transmission, breed indoors of dengue mosquito and breed outdoors of dengue mosquito.

Distribution	Number of patient (n=108)	Percent
Prevent transmission		
Reduce mosquito habit	1	0.9
Use repellents	1	0.9
Sleep under mosquito net	18	16.7
Do not let water stagnate anywhere	57	52.8
Unknown	31	28.7
Breed indoors		
Fridge tray	13	12.0
Flower pot	49	45.4
Water container	2	1.9
All of above	17	15.7
Unknown	27	25.0

Table 3: Distribution of the respondents by attitude and practice to repel mosquito at home.

Distribution of the respondents	Number of patient	Percent
Repel mosquitoes at home		
Aerosol	5	4.62
Coil	4	3.70
Mosquito net	93	86.11
Mosquito repellents	66	61.11
Unknown	2	1.85
Dengue preventive practice		
Engage in dengue prevention activities	11	10.18
Convince neighbors	30	27.78
Cover containers	35	32.40
Family mosquito net	96	88.87
Change plant water	14	12.96
Suggest family changing water	20	18.51
Persuade parents to use larvicide in water containing containers	20	18.51

Table 3 shows that, 86.11% said mosquito net is effective to repel mosquito at home, 61.11% said about mosquito repellents, 4.62% said about aerosol, 3.70% said about coil and 1.85% had no knowledge about it. Table shows that, 88.87% use family mosquito net, 32.40 % had a habit to cover containers, 27.78% had convince neighbors, 12.96% had a habit of change plant water, 10.18% were engaged in dengue prevention activities and

18.51% had a habit to suggest family members about changing water and persuade parents to use larvicide in water containing containers respectively.

Table 4 shows that, the researchers found 95.37% positive containers in schools and 86.11% in home. They found 95.47% Larva of Aedes Albopictus (containers) at schools and 86. 11% at home. They also found 88.87% Larva of Aedes Aegypti (containers) at schools and 84.26% at home.

Figure 4 shows that among all the respondents 40% had sufficient knowledge and 60% had insufficient knowledge regarding dengue prevention.

Table 4: Distribution regarding some investigation.

Subject	Number of patient	Percent
Number of positive containers at schools	103	95.37
Number of positive containers at home	93	86.11
Larva Aedes Albopictus at schools	103	95.37
Larva Aedes Aegypti at schools	96	88.87
Larva Aedes Albopictus at home	93	86.11
Larva Aedes Aegypti at home	91	84.26

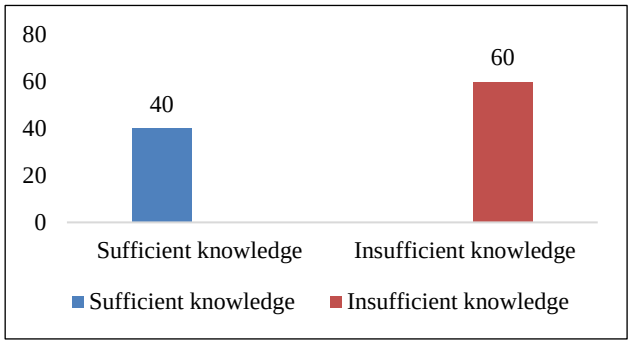

Figure 4: Distribution of the respondents by knowledge grade.

DISCUSSION

Overpopulation and haphazard, unchecked urbanization are the main contributors to the rise in the transmission of mosquito-borne diseases like dengue. KAPs in the community may have a crucial role to play in the prevention and control of dengue epidemics.[17] In order to control the dengue virus, it was discovered that the most frequent issue is a lack of understanding about clinical features or control techniques.[18]

In this study 54% were male and 46% were female. About 66.42% said from mosquito bite, 21.29% said that dengue fever is transmitted through the air, 1.9% said from blood and 11.11% had no knowledge about it that is similar to other studies done in India, Malaysia.[19,20]

In this study 43.5% had no knowledge regarding the time of mosquito active to bite.17.6% said the time was from 5-8 am and 8-12 am respectively. 13.9% said the time was from 4-8 pm and 7.4% said it was from 1-4pm. Some previous studies which were performed in different countries where majority of respondents knew that dengue vectors might bite at sunrise or sunset.[21,22] In this study, 86.1% respondents gathered knowledge from TV, 50.9% from teachers, and 13.9% from their parents. Similar findings were reported in previous studies from India.[23] This showed that in Bangladesh, the media has an impact on how quickly the general public receives health information. In this study, 76.86% said that dengue patients should not take lot of liquid food and 23.14% was said positively about it. 86.11% said mosquito net is effective to repel mosquito at home, 61.11% said about mosquito repellents, 4.62% said about aerosol, 3.70% said about coil and 1.85% had no knowledge about it. A previous study showed, using bed nets would be ineffective in preventing Aedes mosquito bites.[24] Here the researcher found 88.87% use family mosquito net, 32.40 % had a habit to cover containers, 27.78% had convince neighbors, 12.96% had a habit of change plant water, 10.18% were engaged in dengue prevention activities and 18.51% had a habit to suggest family members about changing water and Persuade parents to use larvicide in water containing containers respectively. A previous study showed more than half (55.7%) mentioned that cleaning of the surroundings as an important preventive practice.[19] In this study the researchers found 95.37% positive containers in schools and 86.11% in home. They found 95.47% Larva of Aedes Albopictus (containers) at schools and 86.11% at home. They also found 88.87% Larva of Aedes Aegypti (containers) at schools and 84.26% at home. These findings are almost similar with some previous studies.[25,26] Here, among all the respondents 40% had sufficient knowledge and 60% had insufficient knowledge regarding dengue prevention.

Limitations of the study

The present study was conducted in a very short period due to time constraints. The small sample size was also a limitation of the present study.

CONCLUSION

Despite having some knowledge of the dengue transmission vector and symptoms, preventive measures

are not as effective as they should be. The study's findings demonstrated the significance of the students' basic knowledge of dengue and their living situations for the dengue education programme. To raise community awareness of dengue disease and alter Aedes mosquito behavior, a focus on health education activities should be made.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee of Institute of Biological Sciences, University of Rajshahi, Rajshahi, Bangladesh

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