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Knowledge, attitude and practice of dengue fever among nursing students in Chennai

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ABSTRACT: Background & objective: Dengue is an emergent infectious disease which has significantly increased in numbers since two decades in India. Nurses play a crucial role working in the front lines of patient care contributing to preventative healthcare and health promotion, especially in infectious disease like dengue could be beneficial to dengue control and management. Therefore the objective is to determine knowledge, attitude and practices of dengue fever among nursing students. Methods: A cross-sectional study was conducted among 380 nursing students in Chennai, questionnaires were distributed and the students completed the questionnaire under supervision. The completed questionnaire was analyzed by computerized SPSS (version 21). Results: The results indicated that majority of the participants(95.2%) were aware that the mosquito bite was the mode of spread and also about the disease signs and symptoms. Most of the participants (74.2%) believed that dengue is preventable and 62.36 % of them believed that dengue patients need not be isolated. Practices regarding preventive measures showed that majority of the participants (50.52%) reported that prevention of water collection near houses was the effective way to eradicate breeding sites for the dengue mosquitoes. Interpretation & Conclusion: The results showed that nursing students adequate knowledge in most aspects. The expertise of nurses is directly related to the disease control and implementation of health education programs that trigger changes in population habits and seek strategies to engage students in the improvement and continuous updating of knowledge.

KEYWORDS: Dengue fever, Nursing students, Infectious disease.

I. INTRODUCTION

Dengue viral infection is increasingly recognized as one of the world's emerging infectious diseases because of increasing mortality and morbidity and is currently endemic in over 100 countries, prevalent in tropical and sub-tropical climates worldwide[(1)]. It is caused by a mosquito-borne human viral pathogen that belongs to the genus Flavivirus of the family Flaviviridae. Dengue is transmitted to humans by species of infected Aedes mosquitoes [(2)].

Dengue fever and its more severe form Dengue hemorrhagic fever (DHF) can be caused by any one of the four dengue serotypes (DEN1, DEN2, DEN3, DEN4). Although infection with one serotype induces lifetime immunity against re-infection by the same serotype, there is no evidence of cross immunity [(2)].

The incubation period of dengue fever (DF) ranges from 3-15days. Dengue virus infection can result in a range of clinical manifestations from asymptomatic infection to DF and to more severe form, i.e. DHF or dengue shock syndrome (DSS). Dengue virus infection can affect other organs such as liver, kidneys, brain or heart. There are no specific antiviral treatment for dengue infection and no vaccine available for dengue prevention in India presently [(3)]. The major determinants of dengue control are vector eradication, early case recognition, and adequate clinical management [(4)]. Dengue vector, human knowledge and human behaviour each have been reported to play an important role in the transmission of the diseases. A number of factors have been implicated for this innocuous rise in prevalence such as human population growth, increased travel and inefficient vector control, unplanned urbanization as well as increased movement of people.

Nurses serve as the first-line healthcare providers of dengue case diagnosis, notification, and treatment. Knowledge, attitude, and practice (KAP) of primary health care professionals like nursing students regarding dengue diseases also provide early recognition and improve the outcome of dengue control [(4)].Considering the magnitude of the problem the present study was undertaken to assess the knowledge and attitude of the nursing students regarding dengue and the preventive practices undertaken by them because there is a

great importance for training professionals to be capable of efficiently dealing with this outbreak.

II. MATERIALS AND METHODS

A cross sectional study was conducted among nursing students in Chennai, India in the month of January 2016. The study was approved by the Institutional Review Board and permission to conduct the study was given by the Ethical Committee of Priyadharshini Dental College and Hospital in Thiruvallur district.

There are 19 nursing colleges in Chennai, of which 18 are private and 1 government college. Two nursing colleges were randomly selected and an official permission was obtained from the Principals of concerned nursing colleges priorly to conduct the study. The study population included all the undergraduate nursing students of first to fourth year who were present at the time of study. Participation in this study was voluntary and all the participants' identity remained anonymous.

The estimated sample size for the study was 388 as determined by "G" Power statistical software based on 90% power with an alpha error of 0.5%. A total of 380 nursing students responded to the survey.

A interviewer-administered pre-structured questionnaire consisting of 14 closed ended questions was used and a pilot survey was conducted with a convenient sample of 10 nursing students .They were interviewed to gain feedback on the overall acceptability of the questionnaire. Based on their feedback, questionnaire did not require any correction. The questions covered knowledge about dengue transmission, dengue vector, clinical manifestations and treatment choice; attitude towards dengue prevention, preventive practices against dengue. The questionnaires were distributed to the students in their respective classrooms and the participants were briefed about the aim of the study and were asked to indicate their responses and consultation was not permitted. .The students answered the questionnaires under supervision and the estimated time for completion of the questionnaire was 15 minutes. After answering, questionnaires were collected for evaluation.

The collected data was compiled and tabulated in Excel sheet. The data was analysed using SPSS (Statistical package for the social science) Software version 21 and Descriptive statistics like number, percentage were calculated for the collected data.

III. RESULTS

A total of 380 study subjects participated in the study. All the participants were females of age group 18-21 years from first to fourth year in numbers ;155(%),61(15.3%),93(23.3%),71(17.8%) respectively. Table1 elaborates the knowledge about dengue fever among study subjects.

The study found that more than half of the students (61.57%) of the students knew that dengue is a viral illness and 54% correctly answered that dengue fever is contagious whereas 38.42% failed to answer and remaining 7.36 % had no idea. Almost 95.26% of the participants were right about the spread of the disease that it occurs by mosquito bite and when asked about the species of mosquito which spreads the disease, 58.15% of participants responded correctly that it was Aedes and 34.73% responded that it was Anopheles. However 4.73% of the students didn't know about the species of mosquito which spreads dengue. Around 55.26% answered correctly that dengue mosquitoes are active to bite around daytime whereas 40.78% answered that it was night time and remaining 3.68% didn't know. When asked about the symptoms of the dengue, most common response (70%) were fever and headache, vomiting, skin rashes, muscle and joint pain, although 18.15% answered that only fever and headache were the common symptoms. Vomiting was considered as the only symptom by just 1.05% participants whereas other symptoms like skin rashes and muscle and joint pain were reported by 5.26% and 5.52% respectively. Almost 94.47% answered correctly that dengue mosquitoes breed in stagnant water. As for the drug of choice, 38% chose paracetamol followed by ibuprofen (27.63%), steroids (20%) and aspirin (13.68%).

Questions regarding prevention and need for treatment and hospitalisation was asked to assess the attitude of the students towards the disease. Most of the study participants (74.73%) felt hospital care is necessary for dengue case management. 62.36% of the participants felt that there is no need to isolate persons suffering from dengue fever. 74.21% of the participants believed that dengue is a preventable disease and about 46.84% believed dengue vaccine was available and one can get vaccinated against dengue fever.

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Table 1: Knowledge regarding dengue fever among nursing students

Questions	Number	Percentage (%)
Is dengue a viral disease?		
Yes	234	61.57
No	146	38.42
Is dengue fever contagious		
Yes	206	54.21
No	146	38.42
Don't know	28	7.36
How dengue fever transmitted to a person?		
Mosquitoes	362	95.26
Houseflies	3	0.78
Airborne	2	0.52
Waterborne	13	3.42
What type of mosquitoes transmits dengue fever?		
Aedes	221	58.15
Anopheles	132	34.73
Culex	9	2.36
Don't know	18	4.73
When is usually a dengue mosquito active to bite?		
Daytime	210	55.26
Nighttime	155	40.78
Don't know	14	3.68
What are the common signs and symptoms of dengue fever?		
Fever and headache	69	18.15
Vomiting	4	1.05
Skin rashes	20	5.26
Muscle and joint pain	21	5.52
All of the above	266	70
Where do dengue mosquitoes breed?		
Stagnant water	359	94.47
Running water	9	2.36
Don't know	12	3.15
What is the drug of choice for treating dengue?		
Paracetomol	147	38.68
Ibuprofen	105	27.63
Aspirin	52	13.68
Steroids	76	20

Table 2: Attitude and practice towards dengue fever among nursing students

Questions	Number	Percentage (%)
Do you think dengue patients need hospitalization?		
Yes	284	74.73
No	96	25.26
Do you think dengue patients should be isolated?		
Yes	143	37.63
No	237	62.36
Is dengue a preventable disease?		
Yes	282	74.21
No	98	25.78

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Can you get vaccinated against dengue?		
Yes	124	32.63
No	256	67.36
How should one protect them self mosquito bite?		
Mosquito nets and cover body with blankets	79	20.78
Coils, mats, liquid vaporizers, spray.	121	31.84
Mosquito repellant creams	20	5.26
Window and door screen	115	30.26
Using smoke to drive away the mosquitoes.	45	11.84
What you do to eradicate breeding sites of dengue mosquitoes?		
Avoid water stagnation in discarded empty containers/tires/pots	82	21.57
Covering water containers	39	10.26
Frequent water change in coolers	30	7.89
Covering overhead water storage tanks	27	7.10
Cutting trees and vegetation	10	2.63
Prevent collection of water near houses	192	50.52

The practices section of the questionnaire contained questions that assessed the practices to eradicate breeding sites of dengue mosquitoes as well as usage of preventive interventions. Most of the respondents reported that preventing collection of water near houses(50.52%) and preventing water stagnation in discarded empty containers, tires and pots (21.57%) will eradicate mosquito-breeding sites followed by covering water containers (10.26%), covering overhead water storage tanks (7.10%) and frequent water change in coolers (7.89%) and only very few respondents (2.63%) thought that cutting trees and vegetation near houses will eradicate mosquito breeding sites. When asked about personnel protective measures against mosquito bite 31.84% of respondents reported that they were using coils, mats, vaporizers and sprays (42.50%) followed by window and door screen(30.26%), mosquito nets and covering body(20.78%), use of smoke(11.84%) and mosquito repellent creams (5.26%).

IV. DISCUSSION

Dengue fever is a major mosquito-borne infectious disease causing high mortality and morbidity rates in India. Thus, dengue control has been an important issue for healthcare workers. Our present study explored dengue related knowledge, attitude and practices among nursing students in Chennai.

The present study revealed that 95.2% responded that mosquito bites transmitted dengue fever which is higher when compared to Swati Jain et al[(2)] study(80.6%) and Chinnakali et al[(5)] study(80.5%) and Mansoor et al[(6)]. The possible reasons for better awareness are repeated exposure of nursing students to health education on dengue fever academically and also various other sources.

Dengue is transmitted to humans by species of Aedes mosquitoes and is known to bite mostly during the daytime. In our study 58.15% responded that Aedes species transmits dengue and 55.26% responded that dengue mosquitoes bite during day time, whereas in a study by Swati Jain et al[(2)] and Mansoor et al[(6)], only 15.9% and 22.5% of respondents were aware that dengue mosquitoes bite during daytime. This difference may be due to increased spread of public health awareness programs.

About the treatment aspect, on a question asked about drug used for dengue fever 27.3% responded that Ibuprofen, 13.3% as Aspirin and 20.6% as steroids can be used. Only 38.8 % responded that paracetamol can be used which is similar to the study by Swati Jain et al [(2)] .And in another question asked about availability of dengue vaccine 46.84% responded that dengue vaccine was available. These observations demand the need to educate the nursing students about the drugs and vaccination.

Therefore this result indicates that nursing students have good knowledge and fairly positive attitudes about dengue but not so impressive preventive practices. The major limitation of the study was that selection of college was done as per convenience, therefore finding of the study cannot be generalized. In spite of our study limitations our findings highlight the need for further information, education and communication programs in the community.

V. CONCLUSION

Nursing student's knowledge about the disease is good but there are some gaps concerning a few specific issues related to dengue preventive practices, as evidenced by the low number of correct answer to some of the questions. Further studies aiming the way students are taught and to what they are demanded through their academic education should be developed. There is scope for further research about dengue knowledge, attitude and preventive practices among other health care workers.

VI. RECOMMENDATION

It is essential to raise the knowledge levels of nursing students, who may become future care providers at various level of health system is important. Regular training programs can be launched at every college about current treatment aspect covering drugs, dos and don'ts about treatment for dengue patients. It is essential for all the health care workers to have this knowledge not only physicians. Educational intervention to target community, colleges and schools are urgently needed. Communication can play a major role in informing and encouraging to be responsible and to participate in preventing and controlling dengue fever.

CONFLICT OF INTEREST: None

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