Journal of Pharmacy and Alternative Medicine
ISSN 2222-4807 (online) ISSN 2222-5668 (Paper) An International Peer-reviewed Journal
Vol.14, 2017
www.iiste.org

Knowledge Aptitude and Perspective Study Regarding Awareness of Dengue Fever among 4th Year Students of Nishtar Medical College, Multan-Pakistan

Dr. Sana Ahmad Khan Dr. Hajrah Ahsan Dr. Talha Kareem
Post Graduate Resident,Nishtar Hospital Multan

Dr. Ammarah Ghafoor
Post Graduate Resident, Nishtar Hospital, Multan

Abstract
Introduction: Dengue is a viral disease that has caused significant morbidity and mortality in various regions of the world, especially in the tropical and sub-tropical regions. There is a lack of information on knowledge, attitudes and practices of the people regarding dengue infection.
Objective of study: The objective of the study was to ascertain the knowledge, attitude and practices of 4th year medical students at Nishtar Medical College in relation to awareness of Dengue fever.
Methodology: This was an observational, cross-sectional study in which data was collected by a close ended questionnaire distributed among the students of 4th year medical students.
Findings: Data was collected from 146 responses. All respondents (100%) claimed to know about the dengue fever but only 67 (47.95%) of the respondents knew about the causative agent of the disease and only 57 (39%) of the respondents were well aware of the treatment strategies against the infection. A total of 106 (73.28%) of respondents claimed to know the preventive measures. 139 (95%) knew the preventive measures through their well acquaintance with electronic and print media. The study was carried out at Nishtar Medical College, which is one of the biggest Hospital of Asia.
Conclusion: The proportion of medical students having adequate knowledge about Dengue infection is not very encouraging.
Keywords: Dengue fever, Dengue infection, awareness, knowledge.

1. INTRODUCTION

Dengue is the common and rapidly spreading mosquito-borne viral disease in the world. It is caused by the infection of dengue virus, a flavivirus in the family of flaviviridae (single-strand, non-segmented RNA viruses). There are four antigenically distinct dengue virus serotypes (DEN-1, DEN-2, DEN-3 and DEN-4). The dengue virus is transmitted by bites of female *Aedes aegypti* and *Aedes albopictus* mosquito. Infection with one serotype confers lifelong immunity against that serotype but there is no evidence of cross immunity. Therefore, a man can get multiple infections with Dengue virus during his lifetime. [1,2].

There are two main forms of dengue disease, DF and the more severe dengue hemorrhagic fever (DHF). Infection with dengue virus can produce a broad range of clinical manifestations including asymptomatic infection, mild flu-like symptoms and the more severe hemorrhagic fever. In severe cases, patients may suddenly deteriorate, develop hypothermia and go into circulatory shock (dengue shock syndrome) [3]. About 50–100 million cases of dengue fever and 500,000 cases of Dengue Hemorrhagic Fever (DHF), resulting in around 24,000 deaths, are reported annually [4]. In Pakistan two dengue outbreaks have occurred. Once in June 1994 and the second one in the monsoon of 2010 (July, August). [5]. The insect responsible for the disease (female *Aedes aegypti* mosquito) lives and breeds in clean stagnant water. The World Health Organization (WHO) and Centers for Disease Control and Prevention recommend limited reliance on insecticidal control and emphasis on community educational campaigns that emphasize residents' responsibility in reducing vector breeding sites [6]. DF treatment requires mainly supportive therapy. As there is no vaccine to protect against dengue, great emphasis is placed on control and preventive measures. Thus, evaluation of people's knowledge, attitude, and practices is of great importance to improve integrated control measures.

1.1. Objective of study

1.To assess the knowledge of the students about the causes and effects of Dengue fever.
2. To study the attitude of the students towards Dengue fever.
3. To study the practices of medical students about Dengue fever.

2. RESEARCH METHODOLOGY

This cross-sectional study was conducted at Nishtar Medical College, amongst 4th year MBBS students using a non – probability convenient sampling technique. The total duration of this study was 6 months from July 2016

to January 2017. Primary data was used in this research study. For this purpose, a closed ended self – administered questionnaire was given to the participants relative to the topic for study with a sample size of 146 students.

All the data obtained was entered and analyzed using computer based software SPSS version 20. All the descriptive statistics were tabulated in the form of the frequencies and percentages.

Students were asked about the vector of dengue fever and the causative agent, those who knew that it was transmitted by a mosquito and the causative agent was a virus were considered as having complete knowledge.

Dengue fever is contracted by the bite of mosquito at the time of dawn and dusk. those students who knew about both the timings of contact were considered as having complete knowledge and those who knew only about one was considered as having incomplete knowledge and those who knew either came under the category of having no knowledge.

Students who knew that the mode of transmission was a mosquito and the species was aedes aegyptei were considered as having complete knowledge of the mode of transmission. Those students who knew about the mosquito but did not know about the species was considered as having incomplete knowledge. And those who knew neither were considered as having no knowledge.

Students who were aware of all the 6 symptoms of dengue fever were considered as having complete knowledge which includes fever, myalgia, rash, retro orbital pain, headache and gastrointestinal discomfort. Those who knew any two of them were considered as having incomplete knowledge. those who knew none were considered as having no knowledge.

The treatment for dengue fever is supportive (fluids and rest) and paracetamol. Students who knew about both were considered as having complete knowledge. Those who only knew about paracetamol were considered as having incomplete knowledge. those who didn't know anything about it or those who considered aspirin as a treatment option were included in the category of having no knowledge.

Various measures can be adopted to prevent the spread of dengue fever. Those who knew that it could be prevented by stagnation of clean water in plants and pots, artificial containers, discarded tyre and saucers and also knew about prevention by mosquito repellents and sleeping nets were considered as having complete knowledge. Those students who only knew about prevention through stagnation of water but were not aware of the fact that it was through clean water were considered as having incomplete knowledge. Sometime misperception and misconception of the causes lead to error of judgement in diagnosis and treatment of disease properly [7]. It is an imperative need that senior medical specialists and trainee medical professionals share their knowledge in order to enhance diagnosis skill of diseases. Sometimes lack of sharing knowledge between senior and junior medical professionals delays the quick diagnosis of diseases and their proper treatment [8].

3. DATA ANALYSIS

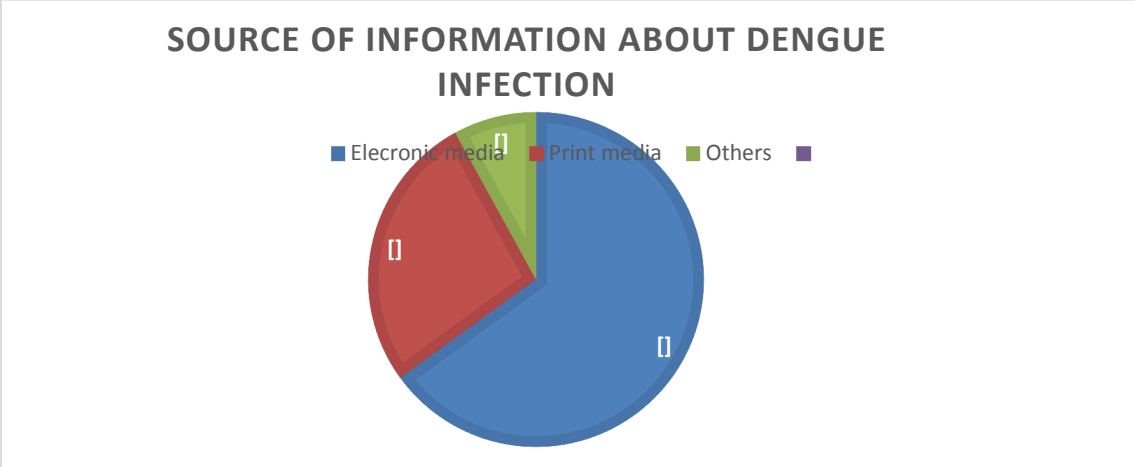
A total of 146 responses were collected from the students. Among them 32 participants were male and 114 were female.

Table 1 Demographic statistics

Gender	Frequency	Percentage
Male	32	22%
Female	114	88%

All of the participants claimed to know about the dengue fever (100%). The source of information was declared to be electronic media by 92 participants (65%), print media by38 participants (27%) while the remaining participants (8%) had other sources of information (friends, street, social media). This has been shown in Figure 1.

Figure 1. Frequency of source of information of dengue infection among students



The students knew about dengue fever and quite a many also had the knowledge of the vector of the disease. 130 out of 146 response forms had affirmative answer.

Table 2 Percentage of students having the knowledge of vector of Dengue virus

Response	Frequency	Percentage
Complete knowledge	130	89%
No knowledge	16	11%

The knowledge about the vector was satisfactory but the knowledge about the causative agent showed a lack of adequate knowledge. Only 70 respondents (48%) answered correctly while the rest of the students were unaware in this regard.

Table 3. Percentage of students having knowledge about causative agent of Dengue infection

Response	Frequency	Percentage
Complete knowledge	70	48%
No knowledge	76	52%

The dengue knowledge among the medical students was not satisfactory as only 43 of the respondents (29%) claimed to have full knowledge of the susceptible time of contacting the disease.

Table 4. Percentage of students having knowledge of contact time of Dengue infection

Response	Frequency	Percentage
Complete knowledge	43	30%
Incomplete knowledge	96	66%
No knowledge	7	4%

The response about the symptoms of disease was also not up to the standard as most of the students (65%) had incomplete knowledge regarding the symptoms that accompany the dengue infection which by no way is satisfactory for medical students.

Table 5. Percentage of students having knowledge regarding symptoms of dengue fever.

Response	Frequency	Percentage
Complete knowledge	47	32%
Incomplete knowledge	95	65%
No knowledge	5	3%

Most of the students had the idea of mode of transmission of the disease but like the symptoms, knowledge was incomplete in most regards with about 80% of the respondents categorized as having a lack of sufficient information.

Table 6. Percentage of students having knowledge about mode of transmission of disease

Response	Frequency	Percentage
Complete knowledge	26	18%
Incomplete knowledge	117	80%
No knowledge	3	2%

As the research was being carried out on medical students, they were expected to have an adequate knowledge about the treatment strategies and the preventive measures of the disease. Most of the students had the basic idea to treat the Dengue fever but an alarming figure of 7% had no idea about treating the infection and even a few students suggested Aspirin as the possible treatment which is regarded as contraindicated in Dengue treatment.

Table 6. Percentage of students having knowledge about treatment of Dengue fever

Response	Frequency	Percentage
Complete knowledge	79	54%
Incomplete knowledge	57	39%
No knowledge	10	7%

On the other hand, most of the students (73%) had complete knowledge about the preventive measures of the disease courtesy to the announcements on electronic and print media.

Table 7. Percentage of students having knowledge about prevention of Dengue fever

Response	Frequency	Percentage
Complete knowledge	107	73%
Incomplete knowledge	37	25%
No knowledge	3	2%

4. FINDINGS

Most of students (90%) had heard about the dengue as a communicable disease spread by a mosquito vector. The remaining 10% who failed to answer correctly misinterpreted *Aedes aegypti* for *Anopheles* mosquito, the leading cause of malaria in Pakistan. This is most likely due to high prevalence of malaria in Pakistan, the knowledge about which is generalized to the dengue mosquito by the common person. [9]

Despite the fact that most of the students had heard about dengue somewhere, a good proportion did possess deficiencies in their knowledge about the disease. A good number of students considered dengue to be contagious, and an almost equal number were not sure whether it has person-to-person transmission. [10] These findings were consistent in other studies conducted in South Asian region. [9, 10].

Three manifestations of dengue are currently known; dengue fever, dengue hemorrhagic fever and dengue shock syndrome. However, fever is the most common presenting symptom in all of them [11]. Our research showed that most students have an average knowledge about the symptoms, with fever being correctly accounted as the most common. These responses showed that the awareness about the symptoms was good. These findings show that spread of knowledge about symptoms is sufficient and effective. Knowledge about the treatment of dengue was not prevalent.

The most common preventive measures in use are mosquito sprays and mosquito nets. Other popular preventive measures in use included application of certain lotions on exposed parts of the body, especially at dawn and dusk and destroying the natural habitat of the *Aedes aegypti* mosquito. [12, 13, 14]. Window and door screens were also a popular method of vector control. Window curtains and domestic water container covers treated with insecticide can reduce densities of dengue vectors to low levels and potentially affect dengue transmission. The students were asked about their source of information. Most of the students had electronic media as their source of information. This also was during the recent epidemic in 2010.

5. CONCLUSION

Majority of the students knew about dengue and its spread but the knowledge has not been satisfactory regarding the treatment of the disease. There has been a low prevalence of sufficient knowledge about Dengue infection in our sample population. However, isolated knowledge on symptoms and prevention is adequate; with preventive measures mainly focused towards protection from mosquito bites.

The main concern however is the inadequate knowledge of medical students regarding the treatment of disease. Only 39% of the respondents have the complete knowledge in this regard which put the general population at an even greater risk. Knowledge about the mode of transmission is also not satisfactory with 80% having an incomplete knowledge. Some of the respondents even assumed it to be a contagious disease and others confused it with the transmission of malaria. The available evidence from sample population is limited and there is a need for a nationally representative survey to assess the knowledge and attitudes regarding dengue and any misconception among medical students.

6. RECOMMENDATIONS

On the basis of above results we make the following recommendations: -

►Students should acquire basic knowledge about Dengue fever, its transmission and symptoms associated with the disease from their seniors and specialists.

►A detailed description of Dengue infection should be included in the course to help the students in a better understanding of the disease.

►Media should be used more frequently to aware the people about the possible attack of the disease and its prevention.

►Seminars should be conducted in medical colleges to acquire students with the basic knowledge in treating the

disease.
►Workshops should be conducted enabling the students and the doctors to tackle the problem during epidemics.
►Municipal corporations should conduct insecticide sprays on stagnant water bodies during the susceptible season to prevent the disease from acquiring an epidemic form.
►Plants should not be kept indoor during the monsoon season.
►Adequate instruments should be provided in the hospitals to help doctors during the epidemic.

7. LIMITATIONS

Our study has the following limitations:
The study was conducted only among the students of 4th year M.B.B.S students, so the actual result may vary overall. The non-serious behavior of a few students might hamper the original results. The entire class was not included in the research; this might have led to an alteration in the results.
A few students might not have understood the questionnaire fully.

REFERENCES

[1].CDC, Centers for Disease Control and Prevention. Dengue fever. Colorado; 2008 [updated 2008; cited October 18, 2008
[2].Hales S, Maindonald J, Woodward A. Potential effect of population and climate changes on global distribution of dengue fever: an empirical model. Lancet 2002; 360: 830.
[3].Pai H, Lu Y, Hong Y, Hsu E. The differences of dengue vectors and human behaviour between families with and without members having dengue fever/dengue haemorrhagic fever. Inter J Environ Health Res 2005;**15:** 263-9.
[4].Leong A, Wong K, Leong T, Tan P, Wannakrairot P. The pathology of dengue haemorrhagic fever. Seminars in Diagnostic Pathology 2007; **24:** 227-36.
[5].Porter KR, Beckett CG, Kosasih H, Tan RI, Alisjahbana B, et al. (2005) Epidemiology of dengue and dengue hemorrhagic fever in a cohort of adults living in Bandung, West Java, Indonesia. Am J Trop Med Hyg 72: 60–66.
[6].World Health O (1997) Dengue Haemorrhagic Fever: Diagnosis, Treatment, Prevention and Control: World Health Organization.
[7]. Awan,Abdul Ghafoor, Ammarah Ghafoor, Muhammad Tayyab Ghafoor (2015). "Analysis of the Misconceptions about Aid and Hepatitis among the Student of Nishtar Medical College Multan: A Study of Knowledge, Aptitude, and Perspective", Malaysian Journal of Medical and Biological Research,Vol.2 (1).35-42.
[8]. Awan,Abdul Ghafoor, Amina Zahra and Ammarah Ghafoor (2017). "Effects of Knowledge sharing on the Doctors' performance: A case study of Public and Private Hospitals in Multan-Pakistan.", Global Journal of Management and Social Sciences, Vol 3 (2).
[9]. Paul RE, Patel AY, Mirza S, Fisher-Hoch SP, Luby SP (1998) Expansion of epidemic dengue viral infections to Pakistan. Int J Infect Dis 2: 197–201. doi: 10.1016/s1201-9712(98)90052-2.
[10]. Acharya A, Goswami K, Srinath S, Goswami A (2005) Awareness about dengue syndrome and related preventive practices amongst residents of an urban resettlement colony of south Delhi. J Vector Borne Dis 42: 122–127.
[11].Hairi F, Ong CH, Suhaimi A, Tsung TW, bin Anis Ahmad MA, et al. (2003) A knowledge, attitude and practices (KAP) study on dengue among selected rural communities in the Kuala [12].Kangsar district. Asia Pac J Public Health 15: 37–43. doi:10.1177/101053950301500107.
[13].Fradin MS, Day JF (2002) Comparative efficacy of insect repellents against mosquito bites. N Engl J Med 347: 13–18. doi: 10.1056/NEJMoa011699.
[14]. Jelinek T (2000) Dengue fever in international travelers. Clin Infect Dis 31: 144–147. doi:10.1086/313889.
[15].Van Benthem BH, Khantikul N, Panart K, Kessels PJ, Somboon P, et al. (2002) Knowledge and use of prevention measures related to dengue in northern Thailand. Trop Med Int Health 7: 993–1000. doi: 10.1046/j.1365-3156.2002.00950.x.