Knowledge About Dengue Fever Prevention Among People Visiting Benazir Bhutto Hospital

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Author’s Contribution
5 Conception of study
2 Experimentation/Study conduction
3 Analysis/Interpretation/Discussion
1 Manuscript Writing
4 Critical Review
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Abstract

Background: The higher incidence of dengue fever in Pakistan demands additional efforts in order to limit the disease. Despite active public health campaigns, low public awareness is one of the factors facilitating dengue virus transmission. For effective preventive measures, the assessment of the knowledge gap and then taking appropriate steps to fill the gap is required. The objective of this study is to assess knowledge about dengue fever prevention among people visiting Benazir Bhutto Hospital, Rawalpindi.

Material and Methods: The descriptive cross-sectional study of 6 months duration was conducted with 280 participants selected via nonprobability convenience sampling. After informed consent, an interview was conducted based on a questionnaire that assessed socio-demographic parameters and knowledge about dengue virus transmission and prevention. Data were analyzed through SPSS v.22. The study was approved by the Ethical Review Board (ERB) of Rawalpindi Medical University and Allied hospitals.

Results: Out of 280 respondents, 54.6% were males and 45.4% females and the mean age was 35.0 ± 13.1 years. The respondents having high knowledge scores were 66(23.6%) while those having moderate and low scores were 159 (56.8%) and 55 (19.6%) respectively. Educated respondents (p=0.03) and urban residents (p=0.05) had higher knowledge scores.

Conclusion: Majority of the participants know about dengue fever. However, only one out of every four respondents have good knowledge scores for dengue fever prevention.

Keywords: Dengue Virus, Mosquito bite, Dengue fever.
Introduction

Dengue fever is a mosquito borne tropical disease caused by dengue virus. WHO reports that globally there are 1.65 million cases annually and it is endemic in 112 countries.\(^1,2\) Dengue hemorrhagic fever and dengue shock syndrome have a mortality of 26%.\(^3\) Rainy season and humidity support dengue-vector breeding.\(^4\)

Factors facilitating dengue virus transmission include lack of proper preventive measures and lack of public awareness about the disease.\(^5\) Since the 1970s, dengue epidemics have been affecting American population.\(^6\) In South India, 86% of the participants had heard of dengue virus while 68% of respondents thought drains and garbage as breeding places of dengue vectors. Also, 25% of the participants were aware of stagnant water as a breeding habitat.\(^7\) A similar study in Pakistan in 2014 reported, 58.6% of participants being aware of Aedes aegypti mosquito as vector of dengue virus; 54.8% had knowledge about stagnant water as its breeding site; 47.6% and 44.7% were of the view that Aedes aegypti bites during dawn and dusk respectively; 51%, 41.3% and 44.7% were knowledgeable of bleeding, headache and vomiting associated with dengue fever, respectively.\(^8\) Another study from Karachi showed that only 35% people had adequate knowledge of dengue fever.\(^9\) The most significant barriers to dengue virus control in Pakistan included high population density with slums having presence of mosquito breeding sites, and a passive role of government regarding community awareness regarding dengue fever.\(^10\)

Studies report that the only predictor of high practice score was obtaining a high knowledge score.\(^11\)

Dengue is a potentially preventable disease and the literature indicates that lack of knowledge about prevention is the key factor in disease susceptibility. Lack of adequate knowledge about dengue fever prevention is one of the main reasons for its prevalence in Pakistan. Despite the public awareness programs, there are outbreaks costing the lives of many every year.

The objective of the study is to find the level of knowledge about dengue fever prevention in order to manifest any knowledge gap and ultimately to emphasize more on the public awareness efforts.

Materials and Methods

This descriptive cross-sectional study of 6 months duration was conducted at Benazir Bhutto Hospital, Rawalpindi. Using nonprobability convenience sampling, 280 participants of age 15 years or above were included in the study. Participants below the age of 15 years, those having any previous exposure to knowledge about dengue fever (e.g. those having family members admitted due to dengue fever in the department of infectious disease) and medical personnel including doctors, nurses and medical students were excluded from the study. Informed consent was taken via consent form. The study was approved by the Ethical Review Board of Institutional Research Forum, Rawalpindi Medical University.

The participants were interviewed based on a referenced questionnaire that assessed the knowledge about source, vector, spread and prevention of dengue virus. Education status, demographic details and social parameters were also included in the questionnaire. The knowledge scores were categorized as low (up to 40%), moderate (from 41% to 70%) and high scores (above 70%) based on the number of questions correctly answered. Data were analyzed using SPSS version 22. Knowledge scores were correlated with different demographic parameters and a p-value of less than 0.05 was considered to be statistically significant.

Results

The study included 280 respondents out of which 153 (54.6%) were male while 127 (45.4%) were females. The mean age was 35.0 ± 13.1 years with 180 (64.3%) participants having age 15 to 39 years and 100 (35.7%) participants having age 40 years or above. Those who lived in urban areas were 186 in number (66.4%) while those living in rural areas were 94 in number (33.6%). Among the participants, 55 (20.0%) were uneducated, 159 (38.9%) had primary/secondary education and 66 (41.1%) had had higher secondary/higher education. The results of the study showed that 23.6% had high scores of knowledge while 56.8% and 19.6% had moderate and low scores respectively. Frequencies and percentages of participants with low, moderate and high scores were calculated (Table-1). 93.6% claimed that they know about dengue fever and the source of their knowledge is described in Table-2. The knowledge about prevention and transmission of
dengue virus was evaluated by a series of questions, the results of which are shown in Table-3. Percentage of respondents with high scores of knowledge was higher in educated (77.2%) as compared to uneducated (22.7%) respondents. The relation between education status and knowledge level was significant (p=0.03). Urban residency was significantly associated with high knowledge scores (p=0.05). However, age and gender had no significant relation with knowledge.

Table 1: Frequency and percentage of knowledge scores among participants

| Knowledge scores | N (%)     |
|------------------|-----------|
| Low              | 55 (19.6) |
| Moderate         | 159 (56.8)|
| High             | 66 (23.6) |

Table 2: Source of knowledge of dengue fever among the participants who had heard of dengue fever

| Source of Knowledge | N (%)     |
|---------------------|-----------|
| Media               | 77 (27.5) |
| TV                  | 143 (51.1)|
| Friends             | 22 (7.9)  |
| Neighborhood         | 22 (7.9)  |
| School              | 16 (5.7)  |

Table 3: Awareness of dengue fever prevention and transmission among participants of the study

| Awareness of dengue fever, its prevention and transmission | Yes N (%) | No N (%) | Don’t know N (%) |
|-----------------------------------------------------------|-----------|----------|-----------------|
| Transmission of dengue virus by mosquito                  | 222 (79.3)| 16 (5.7) | 42 (15.0)       |
| Dengue fever can be prevented                             | 252 (90.0)| 12 (4.3) | 16 (5.7)        |
| Dengue virus Prevention                                   |           |          |                 |
| Clean household                                           | 262 (93.6)| 13 (4.6) | 5 (1.8)         |
| Mosquito nets                                             | 237 (84.6)| 33 (11.8)| 10 (3.6)        |
| Mosquito repellents                                       | 213 (76.1)| 45 (16.1)| 22 (7.9)        |
| Mosquito control                                          | 241 (86.1)| 31 (11.1)| 8 (2.9)         |
| Breeding place of dengue virus is clean water             | 157 (56.1)| 108 (38.6)| 15 (5.4)       |
| Dengue virus cannot be transmitted by direct contact      | 98 (35.0) | 116 (41.4)| 66 (23.6)      |
| There is no vaccine to prevent dengue virus               | 116 (41.4)| 46 (16.4)| 118 (42.1)     |

Discussion

In this study, the percentage of respondents that had heard about dengue fever is 93.6% which is in accordance with other studies in Pakistan (89.9%-92.3%). The percentages are lower in studies conducted in India and Thailand (85% and 67% respectively). Majority of people in Pakistan have heard about the disease because of widespread media campaigns for dengue fever awareness. About four out of five respondents were aware that dengue virus is transmitted by mosquitoes, which is in accord with a past study.

However, only 56.1% respondents were aware that stagnant water is the breeding site. A similar percentage (40%) has been indicated previously. For 78.6% of the respondents, the media was the source of knowledge while in other countries, 43.9% participants had their friends or relatives as the main source of information about dengue fever.

About one out of four (23.6%) participants had good scores of knowledge about prevention and transmission of dengue virus which is less than previous studies conducted in Pakistan (35%) and Philippines (61.45%). Majority of the respondents believed dengue fever can be prevented by mosquito nets and use of mosquito repellents (84.6% and 76.1%, respectively) which is contrary to the previous research results in Pakistan (49% and 38.6%, respectively) and Laos (31.58% and 59.91%, respectively).

As the study employed non-probability sampling and the study setting was a tertiary care hospital, the results cannot be generalized to the population not in contact with medical care.
Conclusion

Majority of the participants have heard about dengue fever. However, only one-fourth of individuals have good knowledge for dengue fever prevention and transmission. Hence, knowledge about dengue fever prevention and transmission is generally inadequate.

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