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Knowledge, Attitude and Practice Regarding Dengue Fever among the Population of Lahore, Pakistan

Shirazi OU[1], Akhtar A[1]*, Fatima S[2] and Batool I[1]

[1]Riphah Institute of Pharmaceutical Sciences, Riphah International University, Pakistan
[2]Punjab University College of Pharmacy, University of the Punjab, Pakistan

***Corresponding author:** Ali Akhtar, Riphah Institute of Pharmaceutical Sciences, Riphah International University, Lahore, Pakistan, Email: aliakhtar5657@gmail.com

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Abstract

Dengue fever is an acute febrile disease caused by one of a number of viruses that are carried by mosquitoes. This prospective cross sectional study was designed to assess knowledge, practice and attitude regarding dengue fever among the population of Lahore, Pakistan. Data was collected from 450 respondents (45.3%) were males and (54.7%) were females. Majority of respondents were employed and (56.0%) respondents were aware about all symptoms of dengue fever, (93.3%) knew that Dengue virus is transmitted through mosquito bites. Radio and TV was the major source of information and (74.4%) respondents were aware of the severity of the DF. Moreover, (74.4%) individuals thought that both Government and people are responsible for mosquito control. Majority considered that DF can be reduced by taking acetaminophen. It was concluded that only knowledge or attitude does not necessarily lead to dengue fever control. Dengue awareness activity must be carried out at the school, college and university level. Radio and television must also play an important role in conveying health information to the public. Both Government and people should play their role in mosquito control that leads to DF prevention. Latest treatment facilities should be provided at hospitals.

Keywords: Dengue Fever; Arthropod Borne Virus; Mosquitoes; Tropical Diseases; Antipyretic

Introduction

Dengue fever (DF) is a viral disease that is caused by the virus transmitted through the mosquito bite. Mosquitoes are the source of transmission of virus to human beings [1]. The name of the virus, which is responsible for causing dengue fever, is parvovirus and it is an arthropod borne virus. There are certain regions in the world like Africa, Middle East, Far East and the Caribbean Islands where this virus is native. In such regions mosquitoes carry this virus and when they move to other regions they transmit this virus to human beings by biting them [2]. Mode of transmission of dengue fever is through mosquito bites. Whenever a female mosquito of genus Aedes carrying the virus bites a human, the virus enters in to the blood of that person, in this way vector of virus transmission to human beings is mosquito [3].

Signs and symptoms of DF includes high fever, bleeding from mouth and nose, joint pain, skin rashes, bleeding from gastrointestinal tract, etc [4]. The worldwide prevalence of the Dengue fever has unexpectedly increased recently. Dengue fever has occurred in Maldives, Bangladesh, Sri

Lanka, India, China and Pakistan in past decades. Nowadays it is common in more than 100 countries [5]. Nowadays chances of dengue fever occurrence are increasing at a faster rate in the Pakistan. Large number of people died because of DF in Lahore. A survey was made by Dr. Javaid Akram in Lahore and according to this greater than 3500 persons have been infected and large number died because of this break bone fever [6]. Risk factors that are responsible for dengue fever include; those people who live in tropical areas are at a greater risk of developing dengue fever because dengue virus is common in such regions. These regions include Latin America, Caribbean Islands, Pacific Islands and Southeast Asia. If a person is infected previously with dengue virus he is at a greater risk of suffering from severe infection [7].

There is no effective treatment available for the complete eradication of dengue fever. However, analgesics, antipyretic medicines are being used for the treatment of dengue fever. Moreover, excessive intake of water and proper bed rest also relieve symptoms of dengue fever. Paracetamol can be used as antipyretic medicine but Aspirin and Corticosteroids should not be used for dengue fever treatment. In case of severe infection patient should consult with the physician. A prospective study was carried out to know whether the methylprednisolone is effective in dengue fever or not. It proved to be ineffective in dengue fever. The Novartis Institute for Tropical Diseases is attempting to find an effective remedy for the eradication of the dengue virus. Hopefully in future a vaccine may be discovered for making people immune against this disease [8].

Material and Methods

Study Design

A prospective cross-sectional study was conducted to estimate knowledge, attitude and practices of population of Lahore regarding dengue fever.

Study Duration

This study was carried out in a period of about 6 months (Nov 2015-May 2016).

Study Location

This study was conducted in the population of Lahore, Pakistan.

Inclusion Criteria

- Age: greater than15 years
- Individuals temporarily or permanently residents of Lahore
- History of fever or a history of spontaneous or provoked bleeding
- Classical Dengue Fever, Dengue Hemorrhagic Fever or Dengue Shock Syndrome

Exclusion Criteria

- Age: less than 15 years
- Individuals living in a city other than Lahore.
- Individuals suffering from some other type of illness

Ethical Approval

The approval for study was taken from Punjab University College of Pharmacy, Medical and Ethics Committee.

Sample Size

The convenient sampling of 450 individuals was performed.

Adoption of Questionnaire

The questionnaire was taken from the paper Knowledge, Attitude and Practice Regarding Dengue Among People in Pakse, Loas [9].

Statistical Analysis

Descriptive statistics was used and Percentile analysis was performed.

Results

Socio-demographic Characteristics of Respondents

The socio-demographic characteristics of subjects are given in Table 1. The table shows that data was collected from (45.3%) males and (54.7%) female subjects. Respondents who were in the range of 15-30 years were (47.1%), in the range of 31-45 years were (23.3%), in the range of 46-60 years were (19.8%) and in the range of 61-75 years were (9.8%). About (2%) of the people were Buddhist, (88.2%) were Muslims, (6.9%) were Christian and (2.9%) were Hindu. About (5.6%) were illiterate, (10.2%) had primary education, (20.0%) had secondary education and (64.2%) were graduates. About (18.4%) were unemployed, (37.6%) were employed, (8.0%) were labours, (17.8%) were students and (18.2%) were housewives.

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Characteristics	No. of respondents (%)
Gender	
Male	204 (45.3)
Female	246 (54.7)
Age groups (yrs)	
15–30	212 (47.1)
31–45	105 (23.3)
46–60	89 (19.8)
61–75	44 (9.8)
Religion	
Buddhist	9 (2.0)
Muslim	397 (88.2)
Christian	31 (6.9)
Hindu	13 (2.9)
Education	
Illiterate	25 (5.6)
Primary	46 (10.2)
Secondary	90 (20.0)
Graduation	289 (64.2)
Occupation	
Unemployed	83 (18.4)
Employed	169 (37.6)
Labor	36 (8.0)
Student	80 (17.8)
Housewife	82 (18.2)

Table 1: Socio-demographic characteristics of the respondents.

Knowledge of Dengue Disease

The results regarding knowledge of dengue fever are shown in the Table 2. About (26.4%) of the respondents thought that fever is the common symptom of dengue fever, (7.6%) considered skin rashes, (10.0%) thought bleeding from nose as the common symptoms of dengue fever. Majority of people about (93.3%) considered that dengue virus is transmitted through mosquito bites, (4.4%) of respondents had no knowledge about the transmission of virus and (2.2%) subjects thought that virus is transmitted through sharing food with infected people. About (27.6%) of respondents thought *Aedes* to be the vector of dengue fever, (16.4%) considered *Anopheles,* (11.6%) considered culet, and (44.4%) had no knowledge regarding vector of dengue fever. About (73.1%) subjects thought boxes, cans etc. as the breeding sites of mosquitoes, (24.4%) considered ponds and rivers. Moreover (2.4%) thought forest as the breeding site of mosquitoes. Health personnel were the source of knowledge in (12.7%) of respondents. Media was the source of information in (42.4%) of subjects and relatives and friends were source of information in (18.7%) of respondents. Covering of water containers was the common way of preventing DF in majority of subjects (51.1%) and (16.2%) considered insecticides as the way of controlling dengue fever. About (16.0%) thought use of mosquito nets in daytime and (16.7%) considered changing water frequently as the way of preventing dengue fever. About (22.0%) considered that breeding time of mosquito is in the evening and majority thought that mosquito can bite any time.

Variables	No. of respondents (%)
Symptoms of DF	
Fever	119 (26.4)
Skin rash	34 (7.6)
Bleeding from nose	45 (10.0)
All of the above	252 (56.0)
Transmission	
Mosquito bites	420 (93.3)
Don't know	20 (4.4)
Sharing food with infected people	10 (2.2)
Mosquito vectors of DF	
Aides	124 (27.6)
Anopheles	74 (16.4)
Culet	52 (11.6)
Don't know	200 (44.4)
Breeding sites of mosquitoes	
Boxes, pots, cans, water containers	329 (73.1)
Ponds, rivers	110 (24.4)
Forest	11 (2.4)
Source of information	
Health personnel	57 (12.7)
Radio/TV	191 (42.4)
Newspaper/Magazine	118 (26.2)
Relatives and friends	84 (18.7)
Way to prevent DF	
Insecticide	73 (16.2)
Covering water containers	230 (51.1)
Using mosquito net in daytime	72 (16.0)
Changing water frequently	75 (16.7)
Biting time of mosquitoes	
Dawn	99 (22.0)
Morning	62 (13.8)
Daytime	69 (15.3)
Night	74 (16.4)
Any time	146 (32.4)

Table 2: Knowledge about Dengue Fever (DF).

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Awareness of Dengue Fever

Table 3 shows the awareness of population of Lahore regarding dengue fever. Majority of people (74.4%) thought that risk of dengue fever is severe. About (11.6%) considered that its risk is not severe and (14.0%) subjects had no knowledge regarding risk of dengue fever. About 77.6% thought that dengue fever treatment is possible, (6.0%) thought its treatment is not available and (14.0%) had no knowledge regarding dengue fever treatment. Majority of people (73.1%) preferred to see a doctor after suffering from dengue fever, (19.6%) preferred to see a traditional physician and (7.3%) preferred to buy medicine themselves for dengue fever treatment. Majority of population had knowledge regarding recurrence of dengue fever. Most of the people thought that both Government and people are responsible for mosquito control.

Factors	No. of respondents (%)
Risk of DF	
Severe	335 (74.4)
Not severe	52 (11.6)
Do not know	63 (14.0)
DF treatability	
Yes	349 (77.6)
No	27 (6.0)
Do not know	74 (16.4)
Attitude of respondents with DF	
See a doctor	329 (73.1)
See a traditional physician	88 (19.6)
Buy medicine yourself	33 (7.3)
Knowledge of DF recurrence	
Yes	231 (51.3)
No	57 (12.7)
Do not know	162 (36.0)
Who should be responsible for mosquito control?	
Government	55 (12.2)
Yourself	62 (13.8)
Both	333 (74.0)

Table 3: Awareness regarding Dengue Fever (DF).

Actual Dengue Fever Prevention

Table 4 shows results regarding actual dengue fever prevention. Majority of people (63.8%) preferred to see a doctor in the first stage of dengue fever. About (14.2%) prefer to treat themselves at home, (13.8%) take traditional medicine and (8.2%) do not know about treatment. Most of the people (45.8%) reduce fever by taking acetaminophen, (13.3%) considered aspirin as the source of reducing fever and (19.3%) drink a lot of water for reducing fever. About (21.6%) do not know about reducing fever. Majority of population store water at home and frequently changes the stored water. About (26.0%) subjects use mosquito nets to prevent mosquito bites, (28.2%) use repellents, (23.3%) use mosquito coils and (22.4%) spray insecticides to prevent mosquito bites.

Questions	No. of respondents (%)
What you do in first stage of fever?	
Treat myself at home	64 (14.2)
Do not know	37 (8.2)
Take traditional medicine	62 (13.8)
See a doctor	287 (63.8)
At home, what do you do in the first stage of fever?	
Reduce fever by taking medicine (acetaminophen)	206 (45.8)
Take aspirin	60 (13.3)
Drink a lot of water	87 (19.3)
Do not know	97 (21.6)
Do you store water at home?	
Yes	305 (67.8)
No	145 (32.2)
If yes, do you frequently change the stored water until it runs out?	
Yes	367 (81.6)
No	83 (18.4)
What measures do you take to prevent mosquito bites?	
Use mosquito coil	105 (23.3)
Use mosquito net	117 (26.0)
Spray insecticides	101 (22.4)
Use repellents	127 (28.2)

Table 4: Actual dengue fever (DF) prevention.

Discussion

We collected data from 450 respondents while in PAKSE, LAOS data was collected from 230 respondents. Our study revealed that (27.6%) respondents to the questionnaires

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have fair knowledge about dengue fever while study conducted in PAKSE; LAOS showed that (70.9%) people have sufficient knowledge about dengue fever. According to our research in (42.4%), respondent's media was the main source of information but in PAKSE, LAOS's people main source of information was their friends or relatives. According to our study (73.1%) people showed positive attitude that DF can be treated while in people of PAKSE, LAOS (94.3%) respondents showed a positive attitude that DF can be treated. According to our study (77.6%), respondents knew they should visit a doctor when they suffer from fever while in people of PAKSE, LAOS (96.5%) respondents knew they should visit a doctor when they suffer from fever. According to our study (67.8%) respondents store water at home while in people of PAKSE, LAOS (85.2%) respondents stored water at home & infrequently changed it. This shows that people in PAKSE, LAOS were more familiar with dengue fever [9].

A similar research work was done in Sri Lanka in 349 individuals while our research was done in 450 respondents. According to our study (27.6%) had sufficient knowledge about DF while in Sri Lanka (98%) had fair knowledge about DF. According to our study (73.1%) individuals showed positive attitude that DF can be treated, but in Sri Lanka (37%) showed positive attitude. This shows that people in Sri Lanka are familiar with DF but less people are aware of its treatment while in Lahore, Pakistan people were more familiar with its treatability [10].

A research study about dengue fever was carried out in Central Nepal in 589 individuals while our research was done in 450 individuals. About (12%) people in Central Nepal had sufficient knowledge about dengue fever while according to our research (27.6%) have sufficient knowledge about dengue fever. About (83%) people in Central Nepal showed positive attitude towards treatability of dengue fever while according to our study (73.1%) individuals showed positive attitude towards treating DF. This shows that people in Lahore, Pakistan were more familiar with dengue fever as compared to Central Nepal [11].

Research study about knowledge of dengue fever was carried out in people of Westmoreland, Jamaica in 192 respondents while we did our research in 450 individuals. In people of Westmoreland (54%), individuals had good knowledge about dengue fever while according to our study 27.6% respondents have sufficient knowledge about dengue fever. About (47%) people of Westmoreland thought DF to be a serious disease while according to our study (74.4%) individuals considered it serious. About (33%) respondents of Westmoreland used bed nets while according to our research (26%) used bed nets. This shows that more people in Lahore, Pakistan considered DF to be a serious disease as compared to the Westmoreland, Jamaica [12]. People in Lahore, Pakistan know about the all symptoms of dengue fever. Majority consider that transmission of dengue fever is through mosquito bites. Most of them have no information about the vector name of dengue fever only few know the name of the vector. Majority of population consider that breeding sites of mosquitoes are boxes, cans etc. few think ponds and rivers. Media is the main source of information. Newspaper/ Magazine are the second source of information. Relatives and friends are the third source of information .Health personnel are the fourth source of information.

Majority think that covering of water containers is the way to control DF. Few think that changing water and using mosquito nets during daytime is the way of controlling dengue fever. Most of the population considers that mosquito can bite anytime. Others think mosquito bite at night or in the morning. Most of the respondents think that risk of dengue fever is severe few do not know about the risk and other consider it is not severe. Majority of population think that dengue fever can be treated and few unaware of treatability of dengue fever. The attitude of majority of population with dengue fever is to see a doctor. Others prefer to see a traditional physician. Few buy medicine by themselves. Majority of population has knowledge about dengue fever recurrence. Others do not have any knowledge about dengue fever recurrence.

Most of the population thought that both Government and population were responsible for mosquito control .Others considered only people themselves can control mosquito while few considered only Government was responsible for mosquito control. Majority of people see a doctor after suffering from dengue fever. Others treat fever themselves at home and some take traditional medicine. Only few people do not know about treatment.

Majority of respondents reduce fever by taking acetaminophen in the first stage of fever. Secondly, people do not have any idea about treatment. Thirdly, they think dengue fever can be treated by drinking a lot of water. Few think it can be treated by using aspirin in the first stage of fever. Majority of people store water at home and others are careful and do not store water at home. Because breeding sites of mosquitoes are uncovered water containers and still water. Therefore, people should be careful regarding storage of water. Water containers should not be let uncovered because it leads to increase in the growing rate of mosquitoes that carry dengue virus. Majority of people change the stored water until it runs out. Most of the people use repellents to prevent mosquito bites. Secondly, they use mosquito nets and thirdly they use mosquito coils and others use insecticides by spraying them. People should be made aware of all the signs and symptoms of dengue fever in all phases of fever to prevent them from going into critical condition because

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severe condition ultimately leads to death.

There are many death cases in Lahore population because of dengue fever because most of people don't have knowledge about severity of the dengue fever and due to lack of knowledge they don't get proper treatment and this leads to critical condition. Special tests are performed to diagnose dengue fever so it is the responsibility of the Government to provide proper medical treatment in Government hospitals because death rate is greater in poor people. Pharmacists can also counsel the people about the signs and symptoms of dengue fever and severity of the condition. At the first time when dengue virus came in Pakistan death rate was greater and most of the people were unaware of the dengue fever but now it has been controlled largely. Attempts are being made to develop a vaccine against dengue virus so that this disease can be eradicated completely. Government is trying best to control dengue fever, for this purpose, spraying of insecticides is done in the season when there are more chances of dengue fever. Different schemes have been made to eradicate dengue fever and different seminars are arranged to make people aware of the severity of disease. People can also play their role in controlling and preventing this disease by cooperation with the Government.

Research work is being done for developing a vaccine against dengue fever for making people immune against this disease. Because chances of suffering from dengue fever are increasing day by day and death rate is increasing. There is need to control this serious condition. Only preventive measures are not enough for controlling the dengue fever instead dengue awareness programs must be organized to make people aware of the signs and symptoms of dengue fever in different phases of fever. In this way, people can overcome the severe condition in an effective manner. Population of Lahore should cooperate with the Government for dengue fever control and for complete eradication of the disease.

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