

## **COMMUNITY PERCEPTION REGARDING DENGUE EPIDEMIC IN LAHORE, PAKISTAN**

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**ABSTRACT:** This cross-sectional study was designed to assess the knowledge, attitude, and practice of people regarding dengue fever in Samanabad Town, Lahore. Purposive random sampling was done to collect data from 560 respondents. Majority (90.5%) of the respondents had a fair knowledge about the vector. According to 41.4%, high grade fever was the most common and obvious symptoms, 97.1% knew that the fever was transmitted by mosquito from one individual to other and 72.5% considered pots and containers filled with water as the major breeding sites for the dengue mosquito. Only 34.5% perceived that Aedes mosquito bites mostly during evening and 47.5% believed that this fever is not contagious in nature. Community was well aware of fever as 228 (40.7%) of the respondents were relying on the insecticidal sprays to prevent mosquito bites and 340 (60.7%) reported TV/radio as the major source of knowledge about dengue.

**Key words:** Acute febrile disease, Infection, Virus.

### **INTRODUCTION**

Dengue fever (DF), an acute viral disease is characterized by severe headache, pain in muscles, joints and eyes, as well as appearance of rash (Guide to Surveillance, Reporting and Control, 2006). Dengue hemorrhagic fever (DHF) involves hemorrhagic manifestations like petechial, internal and external bleeding along with hepatomegaly, and circulatory disturbances. First reports of epidemics of DF had come from Asia, Africa, and North America during 1779–1780. Outbreaks in the three continents indicate a worldwide distribution of these viruses and their mosquito vectors in the tropics. A pandemic of dengue started in Southeast Asia soon after World War II and since then has spread around the globe (Halstead, 1980; Gubler, 1988; Halstead, 1992; Gubler and Trent, 1994; Centers for Disease Control and Prevention, 2005). The dengue virus infection is reported to be prevalent across the entire tropical belt in more than 100 countries, with about 2.5 billion people at risk of being infected (Guglani and Kabra, 2005). Over the past 20 years, there has been a dramatic increase in the incidence and geographical distribution of DHF, and epidemics now occur each year in some Southeast Asian countries. The first outbreak of Dengue in Pakistan was recorded in the port city, Karachi, in 1994 (Rai and Khan, 2007). In 2011, in Punjab, 20864, and in Lahore alone, 17256 confirmed cases were reported, resulting in 323 deaths in the Province with 279 deaths in Lahore (Medicalopedia, 2012). Dengue epidemic is a recent issue in Pakistan so there is very little data available on KAP (knowledge,

attitude and practices) studies. As KAP studies facilitate in assessing the perception of the community about awareness and precautionary attitudes, it has become imperative to conduct such studies in order to formulate effective management strategies. Information, particularly about the impact of socioeconomic and socio-demographic status on the attitudes and practices of community regarding dengue is a very effective tool to tackle the problem.

### **MATERIALS AND METHODS**

This cross-sectional study was conducted in one Union Council (UC) of Samanabad Town of city of Lahore during March to August, 2012. Participants of the study were both males and females who were not exposed to DF or DHF in 2011 epidemic. All those people who suffered from dengue were excluded from the study. Information about knowledge, attitude and practices was collected using a questionnaire. The questionnaire was divided into four sections; the first section covered questions on socio-demographic characteristics (age, gender, occupation, monthly income and qualification) the second was about the knowledge, the third section was related to practices while the fourth section included the attitude of the respondents to DF/DHF.

**Study Design:** This was a descriptive, cross sectional observation study (Zeryehun *et al.*, 2013).

**Place of Study:** Study was conducted in Union Council (UC) no. 100 of Samanabad Town city of Lahore, which is the metropolitan city of Punjab, Pakistan.

**Sample size:** According to the data available in the UC Office, the UC 100 had 6000 households. For the purpose of randomization, the whole UC was divided into three parts, north, south and central, each roughly with 2000 houses and 10 % (200) of total houses in each portion was at least one person of the houses who did not suffer from dengue in the last epidemic. These people were then contacted and interviewed after obtaining their consent. Overall 600 individuals of whole UC of the said Town were contacted. Forty (40) individuals who later refused to share their knowledge about this disease due to some personal reasons had to be excluded from the study.

**Sampling Technique:** Purpose random sampling technique was used to obtain data from the interviewers.

**Procedure:** The questionnaire was pre-tested before conducting the main survey to check its precision. After pilot study necessary amendments were made, all errors were removed and few questions were re-phrased wherever it was required and then the main survey was conducted in UC 100.

**Ethical Consideration:** Permission of competent authority was obtained before conducting the interview. Every study subject was explained about the aims and objectives of the study. Subjects were also ensured about the confidentiality of the information.

## RESULTS

### DESCRIPTIVE STATISTICS

**Demographic information of the Respondents:** Demographic profile of the 560 respondents showed that the percentage of males and females was almost equal (48.4 and 51.6%, respectively), thus removing gender bias. Percentage of respondents of the ages of 15-25 years, 26-35 years, 36-45 years and above 46 years was observed to be 47%, 24%, 19% and 10% respectively. Majority of the respondents were involved in private jobs (29%) while others were government employees (27%), having personal business (16%), students (11%) and unemployed (17%). Pakistan is a developing country with average annual income of 1254 \$ per capita (Bashir *et al.*, 2013). In this study, a major section of the respondents (28%) was earning between 7000-15000 rupees while 8% were earning less than Rs. 7000 per month. Income was not accounted for 28% of the respondents as those were either students or unemployed. Fifteen percent of the respondents were earning Rs. 16000-25000 rupees while the rest (21%) were getting above 25000 rupees per month. About 42.5% of the respondents had a higher level of education, being either graduates or having

education level above that. Respondents having primary level, matriculation or intermediate were 7%, 19% and 28% while 2% had formal education. Only 2% of the respondents were illiterate.

**Knowledge of Respondents about Dengue Fever:** The study revealed that 90.5% of the respondents had heard about the dengue fever from different sources and 41.4% regarded the high grade fever as the most common and obvious symptom of the disease on the basis of their knowledge. A high percentage of people (97.1%) were aware that the fever is transmitted by mosquito from one individual to other and 72.5% considered pots and containers filled with water as the major breeding sites for the dengue mosquito. Of the total, 34.5% of the respondents perceived that this mosquito bites mostly during evening and 25% were of the view that the biting time is morning. Almost equal percentage i.e. 43.8 and 47.5% of respondents believed that dengue fever was contagious or was not contagious, respectively. Among the respondents, 90% knew that this specific type of mosquito requires water for breeding and 83.9% were aware that this fever could be cured by taking some strict preventive measures.

**Attitude and Practices:** Among the 560 respondents, 54.1% reported that they stored water at home in pots and containers etc. This percentage is quite enough to affect the endemicity of the vector resulting in fever. A quite good percentage (40.7%) of the respondents relied on the insecticidal sprays to prevent mosquito bites. In case of dengue fever, 44.3% of respondents preferred to consult a nearby health center after contracting this fever. Amongst all print and electronic media, the best source of generating information about dengue fever, was considered to be TV/radio.

## DISCUSSION

Our study revealed that almost all respondents were familiar with dengue disease. Majority (90.5%) of respondents were aware about symptoms of DF, reflecting a high level of awareness among general public. A similar response (94.5%) was reported in KAP study on Dengue conducted in Karachi (Syed *et al.*, 2010). Most were able to recognize high fever, joint pain, and headache as the main symptoms. A previous report (Syed *et al.*, 2010) revealed that 74.5% of the respondents had associated fever as the commonest of all symptoms with dengue. In a study carried out by Koenraadt *et al.*, (2006), 56% of the respondents reported fever whereas 32% believed that nausea/vomiting were the commonest of the symptoms of dengue fever. The high percentage of the awareness about the disease and its symptoms was perhaps due to frequently aired educational messages and awareness campaigns. The ability of common public to

recognize the signs and symptoms of dengue was important for them to seek early treatment.

Television/radio was one of the main sources of information about symptoms, spread, prevention and control of dengue fever. In general media can play an important role as a source of spreading information. This calls for extensive awareness programs through television/ radio as this mode of dissipating information would be most effective and most popular among people. Results of this study were in conformity with the study conducted by Shuaib *et al.*, (2010), who also found that TV and radio were the predominant sources of creating awareness about dengue fever in public while Degallier *et al.*, 2000 observed that newspaper and street advertisement in addition to television were the main sources of information regarding dissipation of information about dengue. In another survey conducted by Nalongsak *et al.*, (2009), it was reported that majority of the respondents had acquired knowledge about dengue fever from relatives and friends.

As people were aware that open water storage containers could be potential sites of breeding of dengue mosquitoes, it would be easy to convince them to use piped water supplies. Likewise (Syed *et al.*, 2010) reported that water was a main source for dengue mosquito to breed.

Knowledge of biting habits of the vector is also important, and many respondents correctly replied that the biting time was during the day. The results of our study were similar to the studies carried out in an educational institutions. (Degallier *et al.*, 2000), pointed out that 52.5% of teachers, 48.77% of supervisors and 34.6% of students were aware of the correct insect biting time i.e. sunset and sunrise. Similarly Nalongsak *et al.*, (2009), reported that 65.2% were of the view that the biting time was day time; only 10.4% believed that it was night time and 10.9% thought that it was morning time. From the present survey it was found that the methods of preventing mosquito bites such as mosquito coils and bed netting are usually used at night, which are not effective in prevention as the biting times are early morning and evening. This point might be the focus in educating people regarding prevention of dengue fever.

Overall the familiarity about the disease seemed satisfactory and the strategies of creating awareness about the epidemic also appeared to be effective. Thus it is suggested that if the same strategies and practices of precautions and prevention are enhanced, the management and control of the disease would become possible.

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