ORIGINAL ARTICLE

Are We Aware of Dengue Fever? A Community Based KAP Survey on Dengue Fever in Rawalpindi

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ABSTRACT

Objective: To assess the knowledge, attitude and practices regarding dengue fever and its prevention in Rawalpindi

Study Design: A Cross Sectional Survey.

Place and Duration of Study: Community of Rawalpindi, from July to Sept. 2012.

Materials and Methods: A total of 215 participants were selected through consecutive sampling technique. A structured questionnaire was self administered after informed consent was obtained from all the participants. Knowledge of dengue was measured by asking questions related to disease symptoms and preventive measures. Association between knowledge and awareness at $p<0.05$ was accepted as significant.

Results: It was found that the knowledge of the community regarding Dengue fever was adequate (91%). The respondents' awareness about preventive measures for dengue was also satisfactory (88%). A significant association found between knowledge & awareness of dengue fever and preventive measures (P= 0.01). Mass media was identified as an effective tool in raising awareness. However; adequate knowledge about prevention did not reflect in community practices (P=0.031); factors identified responsible for it, were like water storage for domestic use due to water shortage and excessive load shedding.

Conclusion: Local community is well aware about dengue fever and its prevention; however it was found that good knowledge doesn't necessarily lead to good practice. Health educational campaigns should be designed to improve behavior and practices of prevention & control measures against dengue fever.

Key Words: *Dengue fever, Viral hemorrhagic fever, Healthcare. Preventive measures.*

Introduction

Since the beginning of the 21st century, Dengue Fever (DF)/ Dengue Hemorrhagic Fever (DHF) is the emerging most important arboviral disease of humans, occurring in tropical countries of the world where >2.5 billion people are at risk of infection. [1,2] It is still endemic in 112 countries around the world and DHF has been documented in >60 of these countries. [3]

At the beginning of the 21st century it is estimated that between 50 -100 million cases of DF and several hundred thousand cases of DHF occurred each year, depending on the epidemic activity. The case fatality rate (CFR) varies among countries, but can be as high as 10–15% in some and <1% in others. [4]

Dengue fever (DF) is endemic in Southeast Asia. First major epidemic was reported from Srilanka in 1989. [5] Tropical season, peri-urbinization with ill planned and crowded areas and improper waste water management are supposedly responsible for DF in this region. DHF was found in China, Indonesia, Malaysia, Thailand, some studies have reported its epidemics occurred in India and Bangladesh. [6,7,8,9]

In Pakistan Dengue has been around for the past 20 years. The first documented report was in 1985 [10] whereby Dengue type 2 virus was isolated in a sero-epidemiological study for encephalitis. The first major outbreak was reported in 1994-95, another Epidemic has been witnessed in Karachi following heavy rainfalls in 2006. During the previous two epidemics in Karachi, Dengue fever was more commonly seen in the 20 to 40 years age group [10,11]

Dengue vector control requires effective participation of the local community. [12] Knowledge, attitude, and practice (KAP) surveys provide a suitable format to evaluate existing programs and to identify effective strategies for behavior and

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environmental change in order to control disease effectively. It has been noticed such studies have been relatively rare in dengue research .[13,14]

The present KAP study was done with the aim of assessing knowledge regarding Dengue fever among general population and to assess, whether knowledge of dengue symptoms and preventive measures contribute to better preventive practices.

Materials and Methods

A cross sectional survey was conducted amongst the urban community of Rawalpindi during July – September 2012. A total of 215 participants were selected through consecutive sampling technique. A structured questionnaire was self administered after informed consent was obtained from all the participants. Knowledge of dengue was measured by asking questions related to disease symptoms and preventive measures. Regarding practices, questions were asked about the use of preventive measures against dengue fever. Knowledge of symptoms was defined as the respondent mentioning at least two of the following symptoms: fever, headache, nausea/vomiting, rash, bleeding, shock, or muscular pain. Similarly, the criteria was set that the participants had knowledge of preventive measures if mentioned at least three of the following measures: using a mosquito net, using mosquito repellents, sprays, coils, changing and covering stored water and safe disposal of garbage. Preventive practice was defined as using at least one of the following measures; using mosquito repellent, bed net or mosquito coils, screening on windows/doors, covering stored water for domestic use, checking the flower pots and coolers.

Results

Overall the level of awareness about dengue fever was 91% and awareness about preventive measures was 88% which was found out after interviewing 215 participants. The study population was mainly comprised of adults; Mean age of the population was 28 + 5 years; 66% female and 34% male; 67% of the participants were literate and 33% illiterate. Table I; showed the details of demographic features of the study population and KAP in relation with age, gender, education and socioeconomic status. KAP has been categorized on the basis of the responses in to Poor (one or no correct answer), Fair (at least 2 correct answers), Good (3 > 3 correct answers) about knowledge of symptoms, preventive measures and preventive practices against dengue fever.

About mode of transmission of dengue, 99% of the participants knew that Dengue fever is transmitted through mosquitoes. Regarding knowledge about symptoms of dengue, 89%persons mentioned one symptom (fever), 72% persons specified 2 symptoms (fever, headache), 64% told 3 symptoms of dengue (fever, headache & muscular pain) and 24% specified 4 symptoms (fever, headache, muscular pain and bleeding). Majority of the participants 89% reported that the knowledge and awareness of dengue fever was gained by mass media, TV, radio, internet, pamphlets and newspapers.

Regarding Knowledge about preventive measures of dengue fever majority of the participants 89% were aware of at least one method of prevention (mosquito coil/spray/repellent), 80% knew about 2 preventive measures (mosquito coil/spray/repellent and bed nets), 75% were aware of 3 preventive measures (mosquito coil/spray/repellent, bed nets and safe disposal of garbage), although very few participants 18% were aware of covering and changing clean stored water.

The association between knowledge of dengue and awareness about its preventive measures found statistically significant ($p = 0.01$)

When the participants were asked about the preventive practices they have adopted 55% of them were practicing mosquito coil/spray/repellent on & off, 12% bed nets, 10% safe garbage disposal and only 3% covering stored water for domestic use, checking the flower pots and coolers; 20% of the participants were not practicing any preventive measures. This shows adequate level of awareness about dengue symptoms and preventive measures wasn't successful in changing the practices of the community as preventive practices were poor as compare to knowledge, this finding is statistically significant (p = 0.03).

Table No I: KAP (%ages) in relation to Demographic Features (n=215)

Demographic features	%ages	Knowledge (%ages)	Attitude (%ages)	Practices (%ages)
Age (years)				
<20	12%	Fair	Poor	Poor
21-30	35%	Good	Good	Fair
31-40	32%	Good	Good	Fair
41-50	17%	Good	Fair	Fair
>51	4%	Fair	Fair	Poor
Gender				
Male	34%	Good	Fair	Poor
Female	66%	Good	Good	Fair
Education				
Illiterate	33%	Fair	Fair	Fair
Primary	12%	Fair	Fair	Fair
Matric	20%	Good	Fair	Fair
Intermediate	21%	Good	Good	Fair
Graduate	13%	Good	Good	Fair
Socioeconomic status According to earning /month				
Low (<10,000RS)	25%	Fair	Fair	Poor
Low-middle(10-20,000RS)	35%	Good	Fair	Fair
middle(21-30,000RS)	30%	Good	Good	Fair
Upper-middle(>31,000RS)	10%	Good	Good	Good

Discussion

Although the level of dengue knowledge and awareness about preventive measures of local community was satisfactory, however results of this study showed that this knowledge and awareness wasn't effectively put into practice. The personal preventive practices against dengue control weren't at satisfactory level. The focus should be now to motivate community to adopt the preventive practices against dengue.

Previous studies have reported conflicting results regarding the effects of knowledge on dengue prevention practices. Some studies have shown that dengue knowledge was associated with an effective use of preventive measures against the disease [15,16,17] and a reduced number of development sites for vector larvae.[18] Other studies found a significant reduction in the vector

infestation index after community-based prevention campaigns.[18,19,20] However, studies in Puerto Rico,[21] Brazil,[22] and Trinidad en Tobago [23] that found little or no correlation between knowledge of dengue and levels of preventive measures adopted by the communities, findings of these studies are in line with our results.

Our results indicated a weak association between dengue knowledge and preventive practices adopted by the community. Better knowledge does not necessarily lead to better practice, presumably because it is difficult to change a person's behavior due to multiple social and cultural issues like water storages practices, sleeping outdoor due to load shedding, affordability and lack of resources to adopt preventive measures like covering windows with nets, large container with lids etc.

Adequate knowledge of preventive measures in our study could improve the preventive practices. Mass media play a vital role in emphasizing preventive practices like reducing the numbers of unprotected containers. This suggests that more emphasis should be put on practical ways to prevent dengue in educational campaigns. Although in our study it was not directly associated with better practice however, adequate knowledge of symptoms is important to recognize the severity of dengue at an early stage which can lead to proper case management and saves lives.

Conclusion

It is concluded that the local community is well aware about dengue fever and its prevention; however it was found that good knowledge doesn't necessarily lead to good practice. Health educational campaigns should be designed to improve behavior and practices of prevention & control measures against dengue fever. Intersectoral collaboration is needed between different sectors of life like educational, religious and Municipal Corporation for stressing on adopting preventive measures and distributing low cost preventive material against dengue. Closing the gap between knowledge and practice will remain an important challenge for public health to dengue control.

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