

Prevalence Of Dengue Fever Cases, And Awareness Among Dengue Diagnosed Patients Of Urban Healthcare Facilities Of Sindh

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ABSTRACT

Background: Dengue Fever (DF) is a lethal vector borne disease transmitted to humans through the biting of a dengue infected mosquito mainly *Aedes Aegyptae*. The Dengue virus (DENV) is an RNA virus and belongs to Flaviviridae family. Pakistan is among the tropical countries where DF is common and since few previous years several outbreaks reported in District Hyderabad and other parts of the country as well.

In spite of the seriousness of the issue, no information based proof exists in Urban Sindh, Pakistan which uncovers the degree of consciousness of the nation's grown-up populace with respect to dengue fever, **Objective:** To assess the level of awareness regarding the Dengue Fever among the cases of Dengue fever reported at three major Hospitals of Hyderabad (Rajputana Hospital, Shah Bhattai Hospital and LUMHS Hospital Hyderabad, Sindh.

Method: A cross-sectional survey was conducted from July through December 2018 at the first and referral level healthcare facilities of public and private sector of District Hyderabad of Sindh province of Pakistan. All the dengue diagnosed cases reported during the study time were included and information collected on self-developed questionnaire consisting of total 15 questions concerning to dengue fever knowledge and then questionnaire was first pretested after that some changes made and used for the study. and informed consent was taken from all participants. The level of awareness was assessed as, right answer to questions less than five, six to ten and eleven to fifteen considered as Poor, average and good knowledge. Ethical approval were also pursued from the ethical board of advance review committee of Isra University, Hyderabad **Results:** A total 50 cases were reported and diagnosed of Dengue fever and the response rate was 100%. The level of awareness was assessed through self-developed questionnaire the majority of the patients were male (62%) while female (38%), urban (40%) rural (60%), uneducated (64%) Educated (36%) among them (77.8%) Primary level and (22.2%) Matric and the level of awareness include; poor (48%) Average (18%) good (34%).

Conclusion: The overall prevalence of dengue fever patients in secondary and tertiary health care facilities of district Hyderabad during the study duration were 50 cases. While the awareness of the patients about dengue fever & its deterrence was not satisfactory & there is significant knowledge gap with regards to dengue fever. More examinations required to build up the relationship between information, mentality and its adequacy with respect to dengue will be required in showing the effect of mindfulness.

Key words: Dengue Fever, *Aedes Aegypti*, Healthcare facilities.

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INTRODUCTION

Dengue Fever (DF) is a vector-borne sickness brought about by the dengue infection (DENV) and transmitted to people by the nibble of tainted female mosquito of explicit species i.e., *Aedes aegypti* and *Aedes albopictus*.¹ By far, *A. aegypti* recognized as the most efficient vector among all *Aedes* species that transmits dengue virus in humans.² This similar species of mosquito also acts as a vector of some other serious diseases like; Yellow fever, Chikungunya and Zika Infection.^{2,3} World Health Organization declares dengue fever to be endemic in the Asian continent.⁴ Currently, dengue is endemic in 112

countries of the world including Pakistan.⁵ Due to similarities in features of dengue fever with other vector borne viral diseases like; Zika Viral Fever, Yellow fever, West Nile fever etc., most of times the disease is misdiagnosed as such diseases that may further delay in diagnosis and can lead to the ical lymph node involvement i⁵⁻⁸ The incidence of dengue fever is 0.5 per 100,000 in year 2016 as reported by Government of Pakistan.⁷ There is a transition in distribution of disease from mild, moderate to severe, while multiple causes have been indicated including lack of resources, natural disaster, climate change and resistance of mosquitoes to insecticides.^{6,8,9}

Prevention of dengue fever is very effective as in case of other preventable infectious or vector borne diseases.⁽¹⁰⁻¹²⁾ Prevention and control of Dengue depends on the effective vector control measures^{4, 5}.

There are several methods exist to prevent and control the transmission of the dengue causing virus.^{13, 14} At present, combating the vector mosquitoes through simple interventions and dedications found to be the most effective ways to prevent and control this transmission of virus from vector to the host.^{5,15} In a creating nation like Pakistan, preventable infections, for example, dengue can possibly cause the best mortality.⁹⁻¹¹ Despite the extent of issue, no archived proof exists on the mindfulness and practices of the grown-up populace with respect to dengue fever. The main causes and barriers regarding dengue control depicted in another study in Pakistan included congested streets and houses, large population, presence of mosquito breeding sites, and a passive role of government regarding community awareness regarding dengue fever.¹⁶⁻¹⁷ The objective of the present study was to determine the prevalence of dengue fever cases in and level of awareness among patients in urban healthcare facilities of Sindh.

MATERIAL AND METHODS

A Cross-sectional examination was led at three significant Hospitals of Hyderabad (Rajputana Hospital, Shah Bhattai Hospital and Liaquat University of Medical and Health Sciences Hospital Hyderabad, Sindh, Pakistan), from July December 2018. Ethical approval was sought from the ethical and board of advance review committee, Isra university, Hyderabad, Sindh. Written informed consent was also taken from

Patients. Nonprobability (purposive) sampling technique was applied for selection of Health care facilities as these facilities provide specific services for the management/diagnose of Dengue cases as well as for selection of cases. The total 50 dengue diagnosed cases or dengue confirmed cases reported during study duration in selected healthcare facilities of District Hyderabad were included in the study. Patients other than dengue fever cases dengue recurrent cases and Dengue suspected cases were excluded. Data collected using a pre-designed and pre-tested structured questionnaire. First part of questionnaire comprises of Information related to the socio-demographic features of patients while second part consists of dengue awareness questions, different questions designed for diagnosed fever patients. Data entered and analyzed on SPSS version 22 (IBM, incorporation, USA). Level of significance was set at P value < 0.05 as significant.

RESULTS

The current study conducted in different public and private sector care health facilities of Hyderabad. In this study, awareness of total 50 patients assessed diagnosed at various Hospitals of Hyderabad (Rajputana Hospital, Shah Bhattai Hospital and Liaquat University of Medical and Health Sciences Hospital Hyderabad, Sindh, Pakistan) Dengue diagnosed patients reported in overall three different hospitals (public and private sectors) hospitals. Among the facilities, 44 patients reported in Liaquat University Hospital (Public sector), 4 from Rajputana Hospital and 2 from Shah Bhattai hospital, Hyderabad as shown in figure 1.

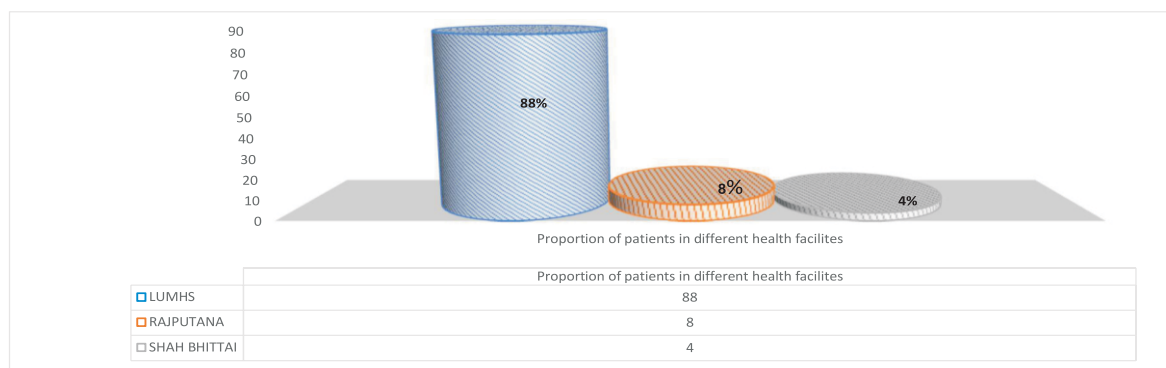


Table 1; below showing the socio-demographic information of all 50 participating patients. Majority (62%) patients of the study were male and 38% of them were female patients. Among the patients, most common age group was 31-40

year as majority (44%) of patients belongs to this age group in comparison to 10-20 years age group (8%). Whereas, majority 64% of all patients were un-educated, while 60% patients belong to rural areas (Table 1).

Table 1: Socio-Demographic distribution of dengue patients reported (n=50)

	Total	Percentage
Gender	N	%
Male	31	62%
Female	19	38%
Age Group		
10-20 years	4	8%
21-30years	13	26%
31- 40 years	22	44%
41- 49 years	11	22%
Education		
No Education	32	64%
Primary	14	28%
Higher	4	8%
Resident		
Urban	20	40%
Rural	30	60%

From the above table it is clear that majority 60% of the Dengue patients were from rural areas and majority 64% of Dengue patients were illiterate which shows that education plays an important role in prevention of any disease.

Awareness of patients assessed using a structured and pre-tested questionnaire. More than two third (84%) of patients know correctly about the vector of dengue while 42% of them think that meal time for the dengue spreading mosquitoes is same for malaria spreading vectors. Majority (48%) of these patients thought that collection of sewage is the most common breeding site of dengue vectors. In reply of question related to preventive measures of dengue, half

(50%) of them replied that proper disposal of waste is the response way to prevent one from dengue (Table2).

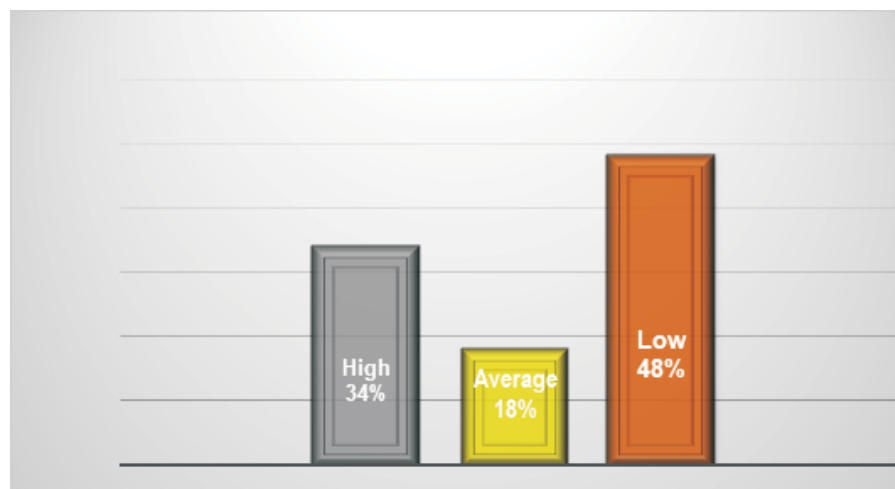
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Table 2: Frequency and Percentage distribution of Patient's Awareness regarding dengue fever (n=50)

Questions	Options	Total	
		n	(%)
Dengue spread by the bite of:	• Mosquito	42	84%
	• Housefly	3	6%
	• Spider	3	6%
	• Don't Know	2	4%
At what time of day are people most likely to be infected by dengue?	• Night	7	14%
	• Daytime	19	38%
	• After sunset	21	42%
	• Don't Know	3	6%
Which is the most common breeding site of dengue mosquito?	• Standing clean water	12	24%
	• Collection of Garbage	11	22%
	• Collection of sewage	24	48%
	• Don't Know	3	6%
Which is the most common symptom of dengue?	• High grade fever	35	70%
	• Diarrhoea	7	14%
	• Insomnia	2	4%
	• Don't Know	6	12%
What are the preventive measures for dengue fever?	• Covering of fresh water containers	5	10%
	• Hand wash	10	20%
	• Proper disposal of waste	25	50%
	• Don't Know	10	20%

As there is no standard scale for assessing awareness about Dengue fever, so with the help of experts/epidemiologist, own awareness level scale about awareness of Dengue fever developed. This scale was developed on the basis of replied questions from participants which are more important related to Dengue awareness i.e. “prevention of dengue fever”, “diagnose of dengue fever” and “treatment/management of Dengue fever”. Those who replied these above mentioned important questions full correctly, were categorized as High awareness level, those who replied these questions partially corrected, were placed in Average awareness level and those who replied completely incorrect all these above mentioned important questions, were categorized as low awareness. Figure 2 below showing the overall awareness regarding dengue fever among our study patients. According to the findings, majority (48%) of patient had low level of awareness regarding to the dengue fever while 34% had the high level of awareness (Figure 2).

Figure 2: Awareness level of patients regarding Dengue (n=50)



DISCUSSION

Globally, WHO is emphasizing and encouraging the countries to move forward in terms of achieving the Universal Health Coverage (UHC) task set by the WHO.⁵ United Nations in 2015 has also adopted Sustainable Development Goals (SDGs) that urges the countries worldwide “to achieve the UHC through access to effective, safe access to the quality essential health care services, access to affordable essential medicines and vaccines along with the protection from financial risk for all.^{18, 19}

Dengue is a rapidly emerging vector borne disease that is extensively affecting countries globally.^{5,6} The disease is putting serious public health burden on tropics and

subtropics regions¹.Healthcare Providers plays pivotal role in management of the diseases like dengue at early stage and/ or even raising awareness among people regarding the disease spread causes and ways to prevent themselves. Lack of information is more dangerous than the ignorance & gap in knowledge of disease among healthcare providers leads to delay in diagnosis as well as over or misdiagnose the disease that ultimately leads to complications and rise in burden of mortality.

Adequate trainings of medical doctors in public as well as private sector health care facilities not only improve the diagnosis and management of dengue cases but decreasing the mortalities related to dengue. In conjunction with that, these trainings and refreshers are crucial in reducing the incidence of disease through patient education in clinics as well as in public health sessions. With the medical doctors, nursing staff / paramedical staff / Lady Health workers (in public and private sector) are also vital raising patients and general population’s awareness regarding diseases like dengue.⁽¹²⁻⁵⁾

Moreover, patients or general population’s awareness, attitude and behavior of towards disease preventive measures, proper hygiene practices and seeking healthcare services are also the key components in reducing the burden of disease and ultimately the toll of deaths. Our study aimed to look for awareness level among healthcare providers (in public and private sector) and gaps in the basics, diagnosis and management of dengue fever and its affected cases.

We observed that in our study, almost all (95%) of the participant patients heard of the word “dengue ”and know about it. Although majority (84%) participants were familiar with dengue being a disease, which spreads by the bite of mosquito, yet several misconceptions identified. In spite of the

way that dominant part of the individuals had caught wind of dengue some place, a significant extent of member populace had need their insight about the infection. A huge extent (48%) of patients believed dengue to be an infectious, illness. These discoveries are predictable with comparable examinations done in the South Asian nations by Suhaimi et al. in 2003 and Acharya et al in 2005.^{20, 21}

We found that members (patients and social insurance suppliers) indicated extensively great information about the side effects of dengue while fever being effectively accounted as the most widely recognized. Predictable discoveries detailed by Acharya et al. 2005 and Dengallier et al, 2000 detailed the satisfactory information on dengue indications in comparable investigations done in India and Brazil.^{21, 22}

Draining and rashes were a portion of the other basic indications referenced. As reflected by Bentham et al. 2002 in their examination did in Northern Thailand, rash or draining is a particular side effect of dengue contamination and not basic in other febrile sicknesses showing that most of individuals can recognize dengue disease from other diseases.²³ These discoveries are conflicting with our investigation discoveries. These reactions demonstrated that the attention to side effects was acceptable among our investigation patients and human services supplier members.

Conclusion

Complete 50 Dengue patients were accounted for in various chose wellbeing offices during study length. We have discovered a low degree of information in our examination populace (patients) in view of by and large information score on dengue. Mindfulness with respect to dengue causes, rearing spots of mosquitoes and preventive measures was additionally discovered low among the patients. The accessible proof from urban populace is constrained and there is a requirement for a broadly delegate overview to evaluate the information and practices with respect to dengue and to additionally investigate any misguided judgment in everyone.

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REFERENCES

1. Fatima Z, Idrees M, Bajwa MA, et al. "Serotype and genotype analysis of dengue virus by sequencing followed by phylogenetic analysis using samples from three mini outbreaks-2007-2009 in Pakistan". *BMC Microbiol* 2011; 11:200.
2. Khan E, Hasan R, Mehraj V, et al Co-circulations of two genotypes of dengue virus in 2006 out-break of dengue hemorrhagic fever in Karachi, Pakistan. *J Clin Virol* 2008; 43:176-9.
3. Ahmed S, Arif F, Yahya Y, et al. Dengue fever outbreak in Karachi 2006- a study of profile and outcome of children under 15 years of age. *J Pak Med Assoc* 2008; 58:4-8.
4. Humayoun MA, Waseem T, Jawa AA et al. Multiple dengue serotypes and high frequency of dengue hemorrhagic fever at 2 tertiary care hospitals in Lahore during the 2008 dengue virus outbreak in Punjab, Pakistan. *Int J Infect Dis* 2010.
5. World Health Organization. Dengue Fever. Available at <http://www.emro.who.int/pak/programmes/dengue-fever.html>.
6. Swat: Dengue Fever Snapshot (7 August - 20 October 2013). <https://reliefweb.int/report/pakistan/swat-dengue-fever-snapshot-7-august-20-october-2013>
7. Relief Web, Humanitarian Bulletin Pakistan Issue 19 | 16 September – 15 October 2013. <https://reliefweb.int/report/pakistan/humanitarian-bulletin-pakistan-issue-19-16-september-%E2%80%93-15-october-2013>
8. Weekly Epidemiological Bulletin - Disease early warning system and response in Pakistan, Volume 5, Issue 22, Wednesday 4 June 2014. <https://reliefweb.int/report/pakistan/weekly-epidemiological-bulletin-disease-early-warning-system-and-response-pakist-122>
9. Pakistan Dengue outbreak 2017. <https://reliefweb.int/disaster/ep-2017-000133-pak>
10. Yousaf MZ, Siddique A, Ashfaq UA, et al. Scenario of dengue infection & its control in Pakistan: An up—date and way forward. *Asian Pac J Trop Med* 2018; 11:15-23
11. Mahmood N, Rana MY, Qureshi Z, et al. Prevalence and molecular characterization of dengue virus's

- serotypes in 2010 epidemic. *Am J Med Sci* 2012; 343:61-4.
12. Ahmad S., Aziz M.A., Aftab A., Epidemiology of dengue in Pakistan, present prevalence and guidelines for future control. *Intl. J. Mosquito Research* 2017; 4(6): 25-32
 13. Haider N. and Iqbal A. Dengue Prevalence and Diagnosis in Pakistan. *IJTDH*, 19(2): 1-14, 2016; Article no. IJTDH.13961
 14. Hasan B., Gangwani M.K. and Hasan F. Dengue in Pakistan; a new approach to battle the endemic. *JPMA* Vol.68, No.4, April 2018
 15. Asrar M., Athar M.R., Nasir S. Et al. Study the Prevalence of Dengue Mosquito Species and Virus Serotypes in Multan. *Pakistan Entomologist* 2017, 39(1):49-53.
 16. Ho H.S., Chih H.M., Wang S.M. et al; Knowledge, attitude, and practice of dengue disease among healthcare professionals in southern Taiwan. *Jour. F.M.A*, 112(1):18-23, 2013
 17. World Health Organization. Dengue Fever. Available at <http://www.emro.who.int/pak/programmes/dengue-fever.html>.
 18. World Health Organization (WHO): Universal health coverage (UHC) 2018. Available at; [http://www.who.int/en/news-room/fact-sheets/detail/universal-health-coverage-\(uhc\)](http://www.who.int/en/news-room/fact-sheets/detail/universal-health-coverage-(uhc)) last accessed (May 2018)
 19. The World Bank, Universal health coverage (UHC). Available at; <https://www.worldbank.org/en/topic/universalhealthcoverage> (last accessed May 2018)
 20. 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 Kangsar district. *Asia Pac J Public Health* 15: 37–43.
 21. Acharya A, Goswami K, Srinath S. et al. (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. 15.
 22. Degallier N, Vilarinhos PT, de Carvalho MS, Knox MB, Caetano J Jr (2000) People's knowledge and practice about dengue, its vectors, and control means in Brasilia (DF), Brazil: its relevance with entomological factors. *J Am Mosq Control Assoc* 16: 114–123.
 23. Van Benthem BH, Khantikul N, Panart K, et al. (2002) Knowledge and use of prevention measures related to dengue in northern Thailand. *Trop Med Int Health* 7: 993–1000