

Review Article

Knowledge, awareness and attitude towards dengue fever outbreaks in the summer

Rawan Almuhanna^{1*}, Abdulrahman Alobudi¹, Saud Alazdi¹, Hammam Alghamdi¹, Muhab Hindi¹, Abdullah Ghanim¹, Elaf Fakeih², Afnan Alharbi², Roaa Jumbi³, Asem Banjar⁴

¹College of Medicine, King Abdulaziz University, Jeddah, Saudi Arabia

²College of Medicine, Umm Al-Qura University, Mecca, Saudi Arabia

³Clinical Audit Administration, Ministry of Health, Jeddah, Saudi Arabia

⁴College of Medicine, Imam Abdulrahman Bin Faisal University, Dammam, Saudi Arabia

Received: 29 June 2018

Accepted: 03 July 2018

*Correspondence:

Dr. Rawan Almuhanna,

E-mail: rawan1994@hotmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Dengue fever is a life-threatening viral infection that has been a public health problem. It is estimated that almost more than one half of the world population live in countries where dengue fever is endemic. Among affected individuals, about 5% develop the fatal dengue shock syndrome and dengue hemorrhagic fever, and almost 20,000 patients die annually with these conditions. Despite the magnitude of the problem, dengue fever is a preventable disease. Prevention can be carried out by elimination of inhabitant mosquitoes, vaccination of vulnerable individuals, and regular health education particularly during outbreaks. Many literatures studies were conducted to evaluate the impact of healthcare education on dengue fever prevention, and many researchers studied the population awareness and attitudes about the disease. Knowledge and awareness varied among different studies, and some factors were reported to influence this knowledge such as gender, socioeconomic status, level of education, and computer literacy. The attitudes also differed among the studies and did not seem to be correlated with the population knowledge about the disease. This article will review the knowledge, awareness, and attitudes among different countries towards dengue fever outbreaks in the summer.

Keywords: Attitude, Awareness, Dengue fever, Knowledge

INTRODUCTION

Dengue fever is a fatal viral infection that results in up to 24,000 deaths every year.^{1,2} It is estimated that about 50-100 million cases are affected with dengue fever and around 0.5 million cases are affected with hemorrhagic dengue fever.³ Dengue fever is endemic in 112 countries especially at Asia, and these countries are inhabited by more than one half of the world population.⁴ This means that at least half of the world population are at risk for developing dengue fever or hemorrhagic dengue fever which carries significant morbidity and mortality.

Dengue fever is a mosquito-borne viral infection caused by the dengue virus. It presents clinically with headache, high fever, myalgia, joint pain, vomiting, and characteristic skin rash. These symptoms occur after an incubation period of few days or weeks following the mosquito bite. In most cases (85%), the condition is mild or even asymptomatic and recovers completely within a week. However, a small proportion of cases (about 5%) progress to a dangerous life-threatening phase where plasma leakage occurs across the blood vessel wall leading to hypotension and shock, or severe fatal bleeding takes place. Each year, from 10,000 to 20,000

patients die with dengue shock syndrome and dengue hemorrhagic fever.⁵⁻⁷ Despite the magnitude of the problem, dengue fever is a preventable disease. Prevention can be carried out by elimination of inhabitant mosquitoes, vaccination of vulnerable individuals, and regular health education particularly during outbreaks.⁸⁻¹⁰. This article will review the knowledge, awareness, and attitudes among different countries towards dengue fever outbreaks in the summer.

KNOWLEDGE, AWARENESS AND ATTITUDE TOWARDS DENGUE FEVER OUTBREAKS IN THE SUMMER

Because dengue fever is a preventable disease despite being fatal, it has become a public health problem that attracted the attention of many health organizations worldwide. Three main lines of prevention are often applied in line: health education, mosquito elimination, and vaccination. The focus of this article will be about the impact of health education line on dengue fever awareness among populations. Many authors had carried out clinical studies to explore the knowledge, understanding, awareness, and attitudes of the general population towards dengue fever, and the impact of media and healthcare education programs on their knowledge.

The general population among different countries seemed to have heard about the dengue fever. However, sufficient correct knowledge about the disease nature, mode of transmission, symptoms and prevention was very poor. Many factors were reported to be associated with good knowledge such as the level of education, the computer literacy, gender, and the socioeconomic class. Itrat et al conducted a cross-sectional study on 447 individuals attending tertiary healthcare hospitals in Pakistan to assess their awareness, knowledge, and attitudes towards dengue fever.¹¹ They reported that despite the high number of individuals (~90%) who had heard of the disease, only about one third (38.5%) had good knowledge of it. Level of education was the main determinant of knowledge about dengue fever, with literate individuals more well-informed about the disease than illiterates ($P < 0.001$). Most of the individuals stated that the television was there source of education. Overall, the sufficient knowledge about dengue fever in Pakistan was poor.

Similarly, Chellaiyan et al studied the knowledge about dengue fever among rural inhabitants in India via a cross sectional study.¹² Among the 224 interviewed participants, 94% reported they had heard about the disease. However, when asked about the details of the disease, only 50% could correctly identify the disease symptoms, 40% knew about the breeding and biting habits of the mosquito, and 89% knew that the Aedes mosquito is the transmitting mosquito. This emphasized the importance of internet in raising the awareness of dengue fever among the public. Furthermore, Soodsada et

al in their cross-sectional study over 9 villages in Laos in 2006, found that over 70% knew about the mosquito transmitting dengue fever, and almost half of the participants had their information from relatives and friends.¹³

Computer literacy was another factor reported to affect the knowledge and awareness of the public about dengue fever. Nyaar et al in their cross-sectional study in conducted in India using interviews with 374 students at bachelor and master levels to explore their knowledge about dengue fever, reported that knowledge about dengue fever was significantly higher among the IT students in comparison with other departments ($p < 0.001$).¹⁴

Gender was also reported to affect the knowledge and awareness about dengue fever. In Sindh, Pakistan, females had a better knowledge about the Aedes mosquito than males, with values of 62.5% and 37.5%, respectively ($p < 0.001$).¹⁵ Similar results were reported in a study conducted in Azad Kashmir, Pakistan in 2016 where females were 2.2 times more aware of the disease than males.¹⁶

Socioeconomic status was a fourth factor reported to influence population awareness about dengue fever. Syed et al. reported that there was a statically significant difference between high socioeconomic and low socioeconomic classes as regards the knowledge and awareness about the disease in Pakistan. Knowledge and awareness were also reported to be poor among population living in rural area¹². Contrary, other authors found no significant difference among socioeconomic statis.^{14,17}

The sources of knowledge about dengue fever varied among studies. Television and internet were reported to be the most common sources of information in most of the studies. However, neighbors, relatives, friends, and sometimes healthcare professionals were uncommonly reported.^{12,14,17,18}

As regards the attitudes and the preventive measures adopted by individuals to protect themselves against dengue fever, different researchers reported variable data. Itrat et al reported that the vast majority of their participants from Pakistan believed that the use of anti-mosquito spray for prevention of mosquito bites is the main preventive technique.¹¹ Only 17.3% knew that eradication of mosquitoes is the main preventive method.

Chellaiyan et al stated that two thirds (63.4%) of their participants used mosquito coils as preventive measures against dengue fever, about 15% used mosquito nets, and up to one fourth (24.1%) did not use any protective techniques against the mosquito bites.¹² Malhotra et al. reported similar results. They stated that the most common preventive methods used in India were liquid vaporizers, mosquito coils, and health education.¹⁹

Positive attitudes towards dengue fever were reported in many literature researches. For instance, Soodsada et al stated that almost 95% of participants had a positive attitude that the disease can be treated and that patients should seek medical advice when they experience the symptoms.¹³ However, proper water storage methods were poorly adopted. Soodsada et al found that over 85% of participants stored water at home for domestic use and did not change it frequently.¹³

Many researchers attribute the negative attitudes and the non-adoption of effective preventive strategies to the poor knowledge about these strategies, for example, only 25% of community participants studied in South India were aware that the *Aedes* mosquitoes breed in clean water.²⁰ In contrast, other authors noted that despite good knowledge and awareness about dengue fever, no positive attitudes were undertaken to prevent or early treat the disease.¹⁷ Amrit et al reported that despite good knowledge about the mosquito, the disease symptoms, and the severity of the disease, almost 90% of participants did not get rid of stagnant water surrounding their homes to eliminate mosquitoes.¹⁸

CONCLUSION

In spite of the severity and fatality of the dengue fever and its heavy endemicity among multiple factors, knowledge about the disease seems to be poor. More than half of the world population are vulnerable candidates for dengue virus infection, and therefore major efforts had been exerted to improve the knowledge and understanding about the disease worldwide. In this article, various literatures studies that were conducted to evaluate the impact of healthcare education on population awareness, knowledge and attitudes towards dengue fever were reviewed. Though the vast majority of the studied participants confirmed that they had heard about the disease, sufficient knowledge was poor. Knowledge and awareness varied among different studies, and some factors were reported to influence this knowledge such as age, gender, socioeconomic status, level of education, and computer literacy. The attitudes also differed among the studies and did not seem to be correlated with the population knowledge about the disease. A large proportion of population either adopted insufficient measures for prevention of mosquito bite or did not try to actively prevent the disease. Mosquito vaporizers, coils, and nets were the most common preventive methods used among the studies. Few participants understood that mosquito elimination was more effective, and fewer reported that they do change or get rid of stagnant water that constitutes a rich environment for vector breeding. Television, internet, friends, neighbors, and relatives were the most common sources of information about dengue fever reported in most of the reviewed studies. It is evident that it is an urgent necessity for public healthcare organizations to improve public awareness about dengue fever through television, internet, radio,

medical programs, and school and college health education sessions.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

- Porter KR, Beckett CG, Kosasih H, et al. Epidemiology of dengue and dengue hemorrhagic fever in a cohort of adults living in Bandung, West Java, Indonesia. *Am J Trop Med Hyg*. 2005;72(1):60-6.
- Gubler DJ, Ooi EE, Vasudevan S, Farrar J. *Dengue and Dengue Hemorrhagic Fever*: 2nd Edition. 2014.
- World Health Organization. *Dengue: guidelines for diagnosis, treatment, prevention, and control*. Spec Program Res Train Trop Dis. 2009;x, 147.
- WHO. *Dengue and dengue haemorrhagic fever*. World Health Organization. 2nd edition. Geneva. 1997.
- Bhatt S, Gething PW, Brady OJ, Messina JP, Farlow AW, Moyes CL, et al. The global distribution and burden of dengue. *Nature*. 2013;496(7446):504.
- Bhatt S, Gething P, Brady O, Messina J, Farlow A, Moyes C. The global distribution and burden of dengue. *NIH-PA Author Manuscr Nat*. 2012;496(7446):504-507.
- Carabali M, Hernandez LM, Arauz MJ, Villar LA, Ridde V. Why are people with dengue dying? A scoping review of determinants for dengue mortality. *BMC Infect Diseases*. 2015;15(1):301.
- Centers for disease control and prevention. *dengue and dengue hemorrhagic fever: information for health care practitioners*. *Dengue Hemorrhagic Fever*. 2009;1-4.
- Renganathan E, Parks W, Lloyd L, Nathan MB, Hosein E, Odugleh A, et al. Towards sustaining behavioural impact in dengue prevention and control. *Dengue Bull*. 2003;27:6-12.
- Teng AK, Singh S. Epidemiology and new initiatives in the prevention and control of dengue in Malaysia. *Dengue Bull*. 2001;25:7-14.
- Itrat A, Khan A, Javaid S, et al. Knowledge, awareness and practices regarding dengue fever among the adult population of dengue hit cosmopolitan. *PLoS One*. 2008;3(7):e2620.
- Chellaiyan VG, Manoharan A, Ramachandran M. Knowledge and awareness towards dengue infection and its prevention: a cross sectional study from rural area of Tamil Nadu, India. *Int J Community Med Public Heal*. 2017;4(2):494.
- Nalongsack S, Yoshida Y, Morita S, Sosouphanh K, Sakamoto J. Knowledge, attitude and practice regarding dengue among people in Pakse, Laos. *Nagoya J Med Sci*. 2009;71(1-2):29-37.
- Nayyar U, Dar UF, Latif MZ, Haider R, Mahmud T, Nizami R. Knowledge, awareness and practices

- about dengue fever among university students. *Pakistan J Med Heal Sci*. 2013;7(4):1097-1100.
15. Bota R, Ahmed M, Jamali MS, Aziz A. Knowledge, attitude and perception regarding dengue fever among university students of interior Sindh. *J Infection Public Health*. 2014;7(3):218-23.
 16. Abbasi A. Dengue Fever: A Statistical Analysis Regarding Awareness about Dengue among University Students in Azad Kashmir. *J Healthcare Commun*. 2017;02(01).
 17. Paran LAPR, Kannaiah BAP, Balasingam KAP, Abdelfatahalhoot M. Knowledge, attitude, and practice towards dengue fever among patients in hospital taiping. 2017;17(3):66-75.
 18. Virk A, Gaira P, Kalia M, Gupta BP. A study to identify gaps in knowledge and practices regarding dengue in a rural population of Punjab. *J Communicable Dis*. 2016;48(3):13-8.
 19. Malhotra G, Yadav A, Dudeja P. Knowledge, awareness and practices regarding dengue among rural and slum communities in North Indian city, India. *Int J Med Sci Public Health*. 2014;3(3):295-9.
 20. Jeelani S, Sabesan S, Subramanian S. Community knowledge, awareness and preventive practices regarding dengue fever in Puducherry - South India. *Public Health*. 2015;129(6):790-6.

Cite this article as: Almuhanna R, Alobudi A, Alazdi S, Alghamdi H, Hindi M, Ghanim A, et al. Knowledge, awareness and attitude towards dengue fever outbreaks in the summer. *Int J Adv Med* 2018;5:772-5.