



**Research Article**

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## Dengue & malaria global burden: A cross sectional study of awareness & practice of dengue and malaria & its difference among different age group in Pakistan

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### ABSTRACT

Malaria and Dengue both are mosquito borne infections. Malaria is spread by Anopheles mosquitoes. It's caused by a parasite called Plasmodium. When an infected mosquito bites us this parasite enters in to our body and goes to liver where it affects red blood cells. While dengue is a mosquito borne viral infection it's also called break bone fever in severe cases it changes in to life threatening dengue hemorrhagic fever, resulting in low level of platelets, low blood pressure and bleeding occurs. This study was conducted based on the awareness of dengue fever and malaria the survey forms were distributed in 100 different age group of people to determine that how much people are aware of these two diseases. In our survey we aimed to determine the awareness between different age groups about dengue fever and malaria. We set three different age ranges first one is between 15-30 years, second one is between 30-45 years and third one is above 45 years. The result of first range for malaria is (72%) and for dengue is (66.42%). The result of second range for malaria is (31.93%) and for dengue is (36.36%) and the result of third range for malaria is (35.56%) and for dengue is (34.60%). By our result we can conclude that the people of first range and third range are more aware of malaria as compare to dengue, while in second range people are more aware of dengue as compare to malaria., Faculty of Pharmacy, Jinnah University for Women, Karachi-74600, Pakistan.

**Keywords:** Dengue, Malaria, Awareness, Extension of disease, Prevention control, Socio-economical burden.

### INTRODUCTION

An emergence of dengue creates globally owing to its gradual increased in the mortality rate<sup>[1]</sup>. Its pathogenesis involves transmission of Aedes mosquito to human of genus Flavivirus and present in subtropical and tropical regions particularly in Asia and America<sup>[2]</sup>. Currently it is regarded as most prevalent mosquito born disease<sup>[3]</sup>. This mosquito born disease place major socioeconomic burden and create an emergence virally all over the world which significantly put on risk 50% population worlds wide<sup>[4-6]</sup>. Extension of this viral disease rise due to several factors like changes in climate, trade, socioeconomic and evolution of virus. Currently there's no anti-viral treatment option available neither any type of vaccine to treat deadly fever<sup>[3]</sup>.

Various studies support lack of knowledge in-depth regarding dengue and its epidemiology which recommend government as major challenge with growing need of hygiene environment by community to obstruct breeding of mosquitoes<sup>[7]</sup>. One of the study conducted at india after outbreak of dengue clearly reveals the fact that there is extreme poor knowledge on dengue about its source of transmission, vector mosquito breeding and practice regarding controlling measure<sup>[8]</sup>.

Almost world's half population has been affected by malaria with an estimated rate in 2008, death of 863000 peoples<sup>[9]</sup>. Due to lack of awareness particularly in Asia, one study conducted among school's students proved inadequate knowledge about pathological mechanism and its prevention control method which demanded detailed surveillance studies and educational programs for students and public awareness to treat and prevent against this deadly disease<sup>[10]</sup>.

Proper identification, detail surveillance and vector to mosquito breeding along with health related literacy is crucial part to combat war against malaria. various action plan designed to aware students of school with aim of 75% students must be literate with understanding regarding prevention against malaria and its treatment till 2012, and 85% till 2015 with successful action plane by 2020 finally malaria awareness must be enhanced with participation in such awareness in the anti malarial battle to eradicate it completely<sup>[11, 12]</sup>.

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The objective of this study is to evaluate knowledge of dengue and malaria difference among different age group to assess the literacy rate regarding this deadly disease to measure the outcome of prevention control in Pakistan society and practices of vector control in different age group.

**METHODOLOGY**

This cross sectional study was basically comprised of questionnaire distributed among different age group to evaluate awareness of malaria and dengue in public of different ages to conclude the knowledge among them. About 100 individuals (n=100) participate in this study age from 15-30, 30-45 and above 45 years old was given a questionnaire. Our aim was to identify the difference of general knowledge of both the diseases between people of different ages. The questions included a general overview of both the diseases in simple language for the convenience of the general public. After detailed surveillance studies results were analyze and interpret statistically and compared with different age groups to draw conclusion.

**RESULTS**

Resultant data from questionnaire carefully evaluate and interpreted on table 1 which clearly reveals the facts that there's huge lack in

sufficient knowledge of dengue and malaria difference and prevention control in different age group which clearly showed that the youngest age group i.e; from age 15-30 showed highest level of literacy of malaria and dengue fever difference and practices of vector control (70% about malaria and 66.42% dengue) , age group between 30-45 showed low level of awareness (32% about malaria and 36% dengue) but more than above 45 years age peoples (35.5% malaria and 35% dengue) showed in Figure 1.

This table clearly showed that there's insufficient rate of literacy of dengue and malaria fever in Pakistan and only 30% follow precautions in age group 15-30 years and highest level of practices to vector control found in people with age group above 45 years. One interesting fact that the people didn't aware that they should avoid NSAIDS and other blood thinner in malaria and dengue to get rid of bleeding chances. Only age group 15-30 followed by culture sensitivity test to confirm the presence of type of plasmodium to indicate drug according to parasite type. Most common type of drug prescribe was Artemether/lumeferentine 60%, Primaquine & chloroquine 21.44% respectively to cure malaria. Dengue is usually cured by home remedies in Pakistan culture with clear monitoring of their Platelets counts as directed by physician to minimize the error associated with insufficient platelet counts.

**Table 1:** percentage in people awareness about dengue and malaria

Knowledge about malaria & dengue	age between 15 - 30- years		age between 30 - 45 years		age above 45 years old		Total overall awareness
	yes %	don't know %	yes %	don't know %	yes %	don't know %	
About malaria	96.96%	3.04%	63.63%	36.37%	60.60%	39.40%	74%
About dengue	90%	10%	57.57%	42.43%	63.30%	36.40%	70.29%
symptoms of malaria	94%	6%	63.63%	36.37%	70%	30%	75.87%
symptoms of dengue	96%	4%	51.51%	48.49%	54.50%	45.50%	67.33%
Difference between normal fever and dengue fever	69%	31%	30.30%	69.70%	18.20%	81.20%	39.16%
Difference between normal fever and malaria fever	84%	16%	6%	94%	39.30%	60.70%	43.10%
Difference between malaria & dengue fever	81%	19%	30.30%	69.70%	24.20%	75.87%	45.16%
Effected by malaria	33%	67%	33.33%	66.67%	10%	90%	25.44%
Effected by dengue	3%	97%	0%	100%	0%	100%	1%
Medication for dengue	30%	70%		100%	0.00%	100%	10%
Medication for malaria	30%	70%		100%	6.06%	93.945	12.02%
precautions(dengue)	30%	13%	60.60%	39.40%	63%	37%	51.20%
precautions (malaria)	82%	13%	60%	40%	63%	37%	68.33%
home remedies(dengue)	69%	31%	24.24%	75.76%	19%	81%	37.41%
home remedies(malaria)	39%	61%	0%	100%	10.00%	90.00%	16%
Culture sensitivity test	24%	76%	0%	100%	9.09%	90.91%	11%
awareness of malaria	72%	----	31.93%	----	35.56%	----	46.49%
awareness of dengue	66.42%	----	36.36%	----	34.60%	----	45.79%

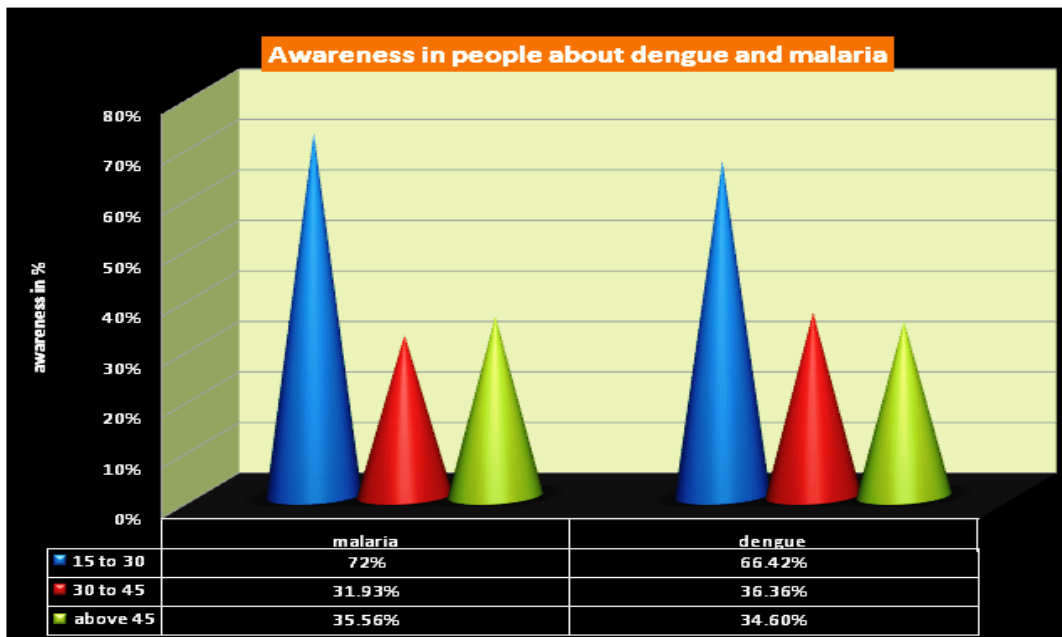


Figure 1: Percentage of awareness of dengue and malaria difference in different age groups

## DISCUSSION

Dengue fever is an infectious disease caused by mosquito bite and caused by any of four related dengue virus. This disease is used to be called break bone fever. Because it sometime cause severe joint and muscle pain that feel like bones and breaking where as malaria is a mosquito borne infectious disease of human caused by parasite protozoan belonging to genus plasmodium. The disease is transmitted by biting of mosquito and the symptoms usually begin ten to fifteen days after being bitten. This study aimed to find out the awareness of dengue and malaria in public according to the different ranges of ages i.e. 15 to 30, 30 to 45 and above 45.our collected data is shown in table below. This table shows the awareness of people about dengue and malaria according to the age wise in age of 15 to 30 i.e. youngest age have a greater awareness about malaria and dengue as compared to other in this range 72% people knows about malaria and 66.42% people knows about dengue. In the second range of age i.e 30 to 45, 31.93% people know about malaria and 36.36% people have knowledge about dengue. In above 45 people have sufficient awareness about malaria i.e. 35.56% and 34.60% people knows about dengue according to the question of survey 74% people heard about malaria and 70% people heard about dengue. We are also find out the overall awareness of dengue and malaria which is shown in table according to the overall awareness of malaria only 46.49% people aware by malaria and 45.79% people knows about dengue we asked people about the difference between malaria and dengue and the result indicated that only 45.16% people knows the difference between both disease 20 % people says that both are the same disease and 35 % don't know their difference 43.10 % people knows about the difference between normal fever and malaria fever. 45.16% people knows the difference between normal fever and dengue fever 11 % people says that doctor recommended CS(chemistry screen) test when he/she effected by malaria and 14% says that doctor did not recommend him/her CS test in case of malaria.

If we are compared both disease so the result shows that people having more awareness of malaria as compared to dengue according to the survey people have very adequate knowledge for dengue fever and their symptoms according to question of survey we asked people about precaution of malaria and dengue and 68.33% people says that malaria/dengue can be prevented by using anti mosquito sprays, bed

nets, remove water stagnant and avoid storage of water. according to survey 25.44% people effected by malaria and 1% people effected by dengue which is a good sign in Pakistan it indicated that after 2011 dengue outbreak in Pakistan people exert more effort to prevent from dengue and malaria .

## CONCLUSION

After careful consideration from this survey we have concluded that people have very adequate awareness about dengue and malaria .This is the time to evoke a sense of moral indignation at unnecessary suffering and for the leadership to mobilize human will power and resources to take on the task of controlling emerging infection disease like malaria and dengue. To provide awareness in people by using media source like television by using hand out pamphlets by discussing with each other by conducting seminar in different school colleges and universities Dengue prevention and control is a shared responsibility. Unless, everybody imparts their role, dengue and malaria will not be controlled.

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**Conflict of interest:** There is no Conflict of Interest.

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