

# Dengue awareness among faculty members of government college university, Faisalabad

## Abstract

**Background:** As Pakistan is a developing country with limited sources and overpopulation, facing problems like earthquakes, water shortages and floods has affected the health conditions of people of Pakistan. Dengue has been a grave problem in Pakistan due to the availability of no vaccine, insufficient sanitation system, presence of polluted water for drinking and overpopulation for a very long time but still each year there are dengue cases reported along with deaths caused by it. Even for being present for a very long time and being prevalent, there is lack of sufficient awareness in the people of Pakistan.

**Aims:** There are awareness studies conducted on various aspects of the population and in different areas but neither there are any studies conducted on faculty members nor consequently there are awareness programs based for the faculty members that are the source of knowledge for the society and specifically the newer generations. Thus, this study focused on determining the level of awareness in faculty members which might help in designing awareness programs for them later on.

**Method:** The sampling technique used in this study was convenient sampling and the sample included 50 faculty members (men = 28, women = 21) from different departments of Government College University, Faisalabad. A self-constructed structured dengue awareness questionnaire was administered onto the participants i.e., the faculty members. Later on, the data obtained through these questionnaires were quantitatively analyzed and interpreted through the Statistical Package for Social Sciences SPSS version 26. Later on, the results were reported.

**Results:** The results of the study showed that 2% of the participants had poor level of dengue awareness, 64% of the participants had moderate or fair level of dengue awareness and 30% of the participants had level of dengue awareness. The results also showed that female faculty members had more dengue awareness as compared to male faculty members. Through the results it was also determined that the level of dengue awareness is greater in the faculty members of medical departments as compared to the faculty members of non-medical departments.

**Conclusions:** This study provided an opportunity to determine the level of dengue awareness among the faculty members of Government College University, Faisalabad. The findings of this study showed that a moderate level of dengue awareness among the faculty members. Thus, the education awareness programs targeting the faculty member should be designed because these programs will not only educate the faculty members rather will become a cycle of information as these faculty members will later on become able to provide accurate information, knowledge and generate awareness in their students specifically and the community in general.

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## Introduction

Pakistan is a developing country with limited sources and overpopulation. It has faced a lot of problems like earthquakes, water shortages and floods that affects the health conditions of people. Dengue has become a huge problem in Pakistan due to no vaccine, insufficient sanitation system, polluted water for drinking, overpopulation and a large number of refugees.<sup>1</sup> The transmission rate of dengue is high in Pakistan and it is becoming more and more common.<sup>2</sup> Dengue fever is caused by dengue virus.<sup>3</sup> It belongs to the family Flaviviridae.<sup>4,5</sup> It is an enveloped, single stranded RNA virus which has three structural proteins as follows: capsid envelope and a precursor protein and seven non-structural ones.<sup>6</sup> Dengue virus has four serotypes which are DENV-1, DENV-2, DENV-3 and DENV-4.<sup>7</sup> These types are distinct and infection with one type only gives immunity against it and not the other ones.<sup>8</sup> The development of vaccine against dengue is complex because of different serotypes which have different antigenic properties.<sup>9</sup>

## Objectives of the Study

- To investigate the level of awareness among the faculty members of the Government College University Faisalabad (GCUF).
- To study the gender differences on the level of awareness among the faculty members of Government College University Faisalabad (GCUF).
- To observe the differences in level of awareness among the medical and non-medical department faculty members of Government College University Faisalabad (GCUF).

## Hypothesis

- There will be a high level of awareness among the faculty members of Government College University Faisalabad (GCUF)
- There will be higher level of awareness in females as compared to the level of awareness in males among the faculty members of Government College University Faisalabad (GCUF).

- The level of awareness regarding the dengue virus infection will be greater in the faculty members of the medical departments while the level of awareness regarding dengue would be lower in the faculty members of non-medical departments of the Government College university Faisalabad (GCUF).

## Materials and methods

**Sample:** The sample of this study includes (N =50) faculty members, both men (n =) and women (n =) of Government College University Faisalabad (GCUF).

**Inclusion Criteria:** The faculty members of the Government College University Faisalabad from the departments in the main campus were selected. Faculty members of varying ages and from both genders were selected.

**Exclusion Criteria:** The faculty members in the department of the new campus of Government College University were excluded from the sampling criteria due to convenience reasons and thus data was not collected from them regarding the level of awareness regarding dengue virus infection or dengue disease.

**Sampling Technique:** The sampling technique used in this research study is the convenient non-probability or non-random sampling technique. Thus, this strategy was used to select faculty members to administer the questionnaire to measure the level of awareness. Convenient sampling is a non-random or non-probability sampling technique in which the participants or respondents are selected based on the convenience of the researcher.<sup>10</sup>

**Research Design:** The research design used in this research study is survey research. The survey method was used to collect data from the participants. Survey method is a research method, technique or tool in which data is collected from a particular group of participants which are predefined and selected on the basis of certain characteristics.<sup>11</sup>

## Operational Definition

**Dengue Awareness:** Dengue awareness is defined as the awareness or knowledge regarding the dengue virus, the dengue disease, its causes, symptoms, treatment options and prevention practices in this study.

**Instrument:** The instrument or questionnaire used in this survey research study is a self-constructed dengue awareness performa. This self-constructed performa is a structured questionnaire and it tends to obtain information regarding three areas i.e., health promotion and education exposure, attitude and knowledge.

## Procedure

The sample was selected non-randomly from different departments of the Government College University Faisalabad (GCUF). The sampling technique used was convenient sampling to select the sample of faculty members. Firstly, consent was taken from the participants and then they were asked to fill the self-constructed structured questionnaires for measuring the level of awareness. The instructions regarding the questionnaire were imparted to the participants. The questions of participants were answered and thus, the process of getting the forms filled was completed. Later on, all the participants were thanked for giving their time and participating in the current research study. After collecting the data, it was fed into the SPSS version 21 and then it was analyzed through it.

## Results

This chapter include the outcomes of the current study. The IBM's

Statistical Package for Social Sciences (SPSS) version 21 was used to employ differential and inferential statistics on the self-constructed questionnaire used to measure the level of awareness of dengue among the faculty members of Government College University Faisalabad.

Table 1 illustrated the demographic characteristics of the sample. It includes all the necessary demographic information of the participants such as gender, age, economic status, etc.

**Table 1** Socio-demographic characteristics of the participants (N=50)

Sample Characteristics	N	%
Gender		
Men	28	56
Women	22	44
Age		
21-30	13	26
31-40	25	50
41-50	12	24
Marital Status		
Single	10	20
Married	40	80
Economic Status		
Upper Class	13	26
Middle Class	37	74
Job		
Full time	40	80
Part time	10	20
Department		
Medical	28	56
Non-medical	21	42

Table 2 showed that the data is normally distributed as the skewness acceptable values falls between 3 and -3 and the kurtosis acceptable values falls between 10 and -10 and that is suitable for parametric statistics.

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Table 4 showed that the data is normally distributed as the skewness acceptable values falls between 3 and -3 and the kurtosis acceptable values falls between 10 and -10 and that is suitable for parametric statistics.

Table 5 showed that the reliability of Dengue Awareness Performa is good ( $\alpha = 0.71$ ).

Table 6 shows that the faculty members of GCUF have a mediocre level of involvement in health promotion and education exposure, mediocre level of attitude towards dengue spread and mediocre amount of knowledge regarding dengue.

Table 7 shows that there is a significant gender difference on knowledge  $t(50) = -3.16$   $p < 0.05$ . There is a non-significant gender difference on health promotion and education exposure  $t(50) = -0.86$   $p > 0.05$  and on attitude  $t(50) = -0.56$   $p > 0.05$ .

Table 7 also shows that women faculty members have more serious attitude, more knowledge and are more involved in health promotion and education exposure as compared to men faculty members.

Table 8 shows that there is a significant difference in the scores of medical and non-medical faculty members on knowledge  $t(50) = 2.50$   $p = 0.05$ . There is a non-significant gender difference on health promotion and education exposure  $t(50) = 1.40$   $p > 0.05$  and on attitude  $t(50) = 0.98$   $p > 0.05$ .

Table 8 also shows that faculty members of medical departments are more involved in health promotion and education exposure, has more serious attitude and more knowledge as compared to the faculty members of non-medical departments.

Table 9 shows that there is a non-significant negative correlation between health promotion & education exposure and attitude. There

is a non-significant positive correlation between health promotion & education exposure and knowledge. There is a negative correlation between health promotion & education exposure and age. There is a significant positive correlation between knowledge and attitude and a non-significant positive relationship between age and attitude. There is a non-significant negative relationship between age and knowledge Table 10, Figure 1.

**Table 2** Descriptive statistics for health promotion and education exposure (N=50)

Variables	N	Min	Max	M	SD	Skewness		Kurtosis	
						Statistic	SE	Statistic	SE
HPEE1	50	0	1	.18	.388	1.718	.337	.989	.662
HPEE2	50	0	3	.86	.606	.639	.337	2.370	.662
HPEE3	50	0	1	.40	.495	.421	.337	-1.900	.662
HPEE4	50	0	6	1.12	.918	2.218	.337	6.121	.662
HPEE5	50	0	1	.56	.501	-.249	.337	-2.020	.662
HPEE6	50	0	1	.60	.495	-.421	.337	-1.900	.662
HPEE7	50	0	1	.70	.463	-.900	.337	-1.241	.662
HPEE8	50	0	1	.36	.485	.602	.337	-1.708	.662
HPEE9	50	0	1	.76	.431	-1.256	.337	-.443	.662

**Table 3** Descriptive statistics for attitude (N=50)

Variables	N	Min	Max	M	SD	Skewness		Kurtosis	
						Statistic	SE	Statistic	SE
AT10	50	0	1	.38	.490	.510	.337	-1.814	.662
AT12	50	0	1	.86	.351	-2.140	.337	2.684	.662
AT13	50	0	1	.72	.454	-1.011	.337	-1.021	.662
AT14	50	0	1	.68	.471	-.796	.337	-1.425	.662
AT15	50	1	1	1.00	.000	.	.	.	.

**Table 4** Descriptive Statistics for Knowledge (N=50)

Variables	N	Min	Max	M	SD	Skewness		Kurtosis	
						Statistic	SE	Statistic	SE
KN16	50	0	1	.78	.418	-1.394	.337	-.061	.662
KN17	50	0	2	.74	.600	.160	.337	-.461	.662
KN18	50	0	1	.58	.499	-.334	.337	-1.969	.662
KN19	50	0	4	2.12	1.206	.124	.337	-1.352	.662
KN20	50	0	4	1.68	1.186	1.196	.337	-.167	.662
KN21	50	0	2	.68	.653	.434	.337	-.662	.662
KN22	50	0	1	.44	.501	.249	.337	-2.020	.662
KN23	50	0	1	.76	.431	-1.256	.337	-.443	.662
KN24	50	0	1	.68	.471	-.796	.337	-1.425	.662
KN25	50	0	1	.84	.370	-1.913	.337	1.726	.662
KN26	50	0	1	.72	.454	-1.011	.337	-1.021	.662
KN27	50	0	1	.94	.240	-2.821	.337	3.124	.662
KN28	50	0	1	.82	.388	-1.718	.337	.989	.662
KN29	50	0	1	.88	.328	-2.412	.337	3.974	.662

**Table 5** Reliability score of study measure (N=50)

Measures		K	M	SD	$\alpha$
I.	Dengue Awareness Performa	28	21.84	5.20	.70

**Table 6** Mean and Standard deviations of health promotion & education exposure, attitude and knowledge (N=50)

Variables	N	M	SD
Health Promotion & Education Exposure	50	5.54	2.02
Attitude	50	3.64	.96
Knowledge	50	12.66	3.97

**Table 7** t-test on gender differences for health promotion & education exposure, attitude and knowledge in dengue awareness performa (N= 50; Nm = 28, Nw = 22)

Variables	Gender				t	df	p	95% CI		Cohen's d
	Women		Men					LI	UI	
	M	SD	M	SD						
Health Promotion & Education Exposure	5.82	2.36	5.32	1.72	-.86	48	.39	-1.66	.67	0.24
Attitude	3.73	0.93	3.57	0.99	-.56	48	.57	-.712	.40	0.17
Knowledge	14.21	3.73	11.21	3.59	-3.16	48	.003	-5.38	-1.19	0.82

**Table 8** t-test on medical and non-medical department differences for health promotion & education exposure, attitude and knowledge in dengue awareness performa (N= 50; Nm= 28, Nnm= 22)

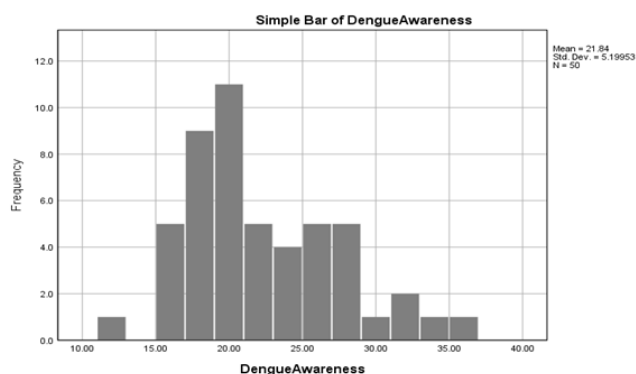
Variables	Type of Department				t	df	p	95% CI		Cohen's d
	Medical		Non-medical					LI	UI	
	M	SD	M	SD						
Health Promotion & Education Exposure	5.96	2.30	5.19	1.21	1.40	47	.17	-.34	1.88	0.42
Attitude	3.75	1.04	3.48	.87	.98	47	.33	-.29	.84	0.28
Knowledge	13.68	4.16	11.38	3.47	2.05	47	.05	.04	4.55	0.60

**Table 9** Summary of inter-correlation among scores of health promotion & education exposure, attitude, knowledge and age (N=50)

Variables	1	2	3	4
1. Health Promotion & Education Exposure	1			
2. Attitude	-.01	1		
3. Knowledge	.19	.42**	1	
4. Age	-.07	.21	-.25	1

**Table 10** Level of awareness among the faculty members of government college university Faisalabad (N=50)

Sr.no.	Scores on Dengue Awareness Questionnaire	Interpretation (level of dengue awareness)	Percentage of Responses
1.	0-12	Poor	2%
2.	12-24	Fair	68%
3.	24-35	Good	30%

**Figure 1** The bar chart shows the scores of participants on the dengue awareness questionnaire (N=50).

The graph shows 2% of participants scored below 12 i.e. poor level of awareness. The graph also shows that 64% of participants scored between 12 and 24 i.e. moderate or fair level of dengue awareness and 30% of participants scored above 24 i.e. good level of dengue awareness.

The purpose of the study was to determine the level of dengue awareness in the faculty members of Government College University Faisalabad. A high level of awareness was expected to be present in the faculty members of Government College University Faisalabad as the faculty members are the ones imparting knowledge to the students but the results showed a moderate or fair level of awareness to be present on health promotion and education exposure, attitude and knowledge i.e., the three areas of the dengue awareness questionnaire used to measure dengue awareness. Specifically, the results showed

2% of participants scoring poor level of dengue awareness, 68% of participants scored fair level of dengue awareness and 30% of participants scored good level of dengue awareness.

No research study has been conducted on faculty members to determine the level of dengue awareness previously. This discrepancy in results can be explained based on the research conducted on the students of Government College University Faisalabad regarding level of awareness. The results of that study showed a poor level of awareness among the students of Government College University Faisalabad and thus it was concluded that the level of awareness regarding dengue is poor in southern Punjab<sup>12</sup> which explains the moderate level of dengue awareness instead of a high level of dengue awareness among the faculty members of Government College University Faisalabad.

The results of this study also showed a non-significant difference in the gender differences in terms of the level of dengue awareness. It was expected that the level of dengue awareness would be high in women as compared to men based on researches conducted earlier in Sindh.<sup>13</sup> In the current study, similar results were found as the results have shown a higher level of involvement of women faculty members in health promotion and education exposure, having more knowledge and more serious attitude as compared to men faculty members of Government College University Faisalabad.

The t-test results about the differences in medical and non-medical departments on the basis of level of dengue awareness were obtained. The expected results were that the awareness would be higher in the faculty members of medical departments as compared to the faculty members of non-medical departments. The results obtained were in accordance to the expected results as the scores of the faculty

members of medical departments were higher as compared to the faculty members of non-faculty members.

The results obtained in this study also showed a positive correlation between age and serious attitude while a negative correlation between age and health promotion and education exposure. It was also determined that a negative correlation exists between age and knowledge. The results can be explained in the view of social media, as nowadays younger generations are more likely to use social media and social media nowadays is the main source of knowledge, thus the younger people are more likely to have knowledge and are more likely to get involved in health promotion and education exposure.

#### The current study limited by many points as follow:

- The current study included a small sample. A larger sample would have given more accurate results and would give more opportunity for generalization of the results.
- In the current study the data was gathered only from the participants who were conveniently available i.e., non-probability or non-random form of sampling. A more probable sampling technique would have given more chances of generalizing the results.
- In the current study, data was obtained only from one university i.e., Government College University Faisalabad. Data gathered from different universities in the same region would have provided with a variety in the data.
- In this study, the data was obtained only from one university of one city of Punjab. To give more generalizable explanations regarding southern Punjab, data should be gathered from different universities of different cities of Southern Punjab.

According to the current study we can suggest:

- A qualitative study should be designed to determine the level of awareness among the faculty members to get more detailed understanding of the kind and type of awareness and to understand what is lacking.
- A study with a larger sample should be conducted to get more accurate and more generalizable results in the future.
- A study should be executed in which sample should be selected through a probability or random sampling technique for increasing the generalization of the results.
- A study should be done in the future in which faculty members of different universities of Faisalabad should be selected and data should be obtained for them to determine the level of awareness in the Faisalabad region in general.
- A study should be designed to gather information and data from the faculty members of different universities of different cities of Southern Punjab to draw conclusions regarding the level of awareness in southern Punjab.

There are a lot of educational interventions and community-based awareness programs that are developed for the students and the community in general but there aren't much programs designed for the faculty members as they are the ones who would impart knowledge and can enhance learning and knowledge in the upcoming newer generations. Thus, awareness programs should be designed for the faculty members to enhance awareness among the students and in the society in general.

## Conclusion

This study provided an opportunity to determine the level of dengue awareness among the faculty members of Government College University, Faisalabad. The findings of this study confirmed some of the hypothesis as it confirmed that the level of awareness was higher in women as compared to men. It also showed that the level of dengue awareness was higher in the faculty members of medical department as compared to faculty members of non-medical departments. More specifically the study showed that 2% of the participants showed poor level of performance, 68% of the participants showed a moderate or fair level of dengue awareness and 10% of participants showed good level of dengue awareness. Thus, the education awareness programs targeting the faculty member should be designed because these programs will not only educate the faculty members rather will become a cycle of information as these faculty members will later on become able to provide accurate information, knowledge and generate awareness in their students specifically and the community in general.

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None.

## Conflicts of Interests

The authors declare that there is no conflicts of interest.

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