



# EFFECTIVENESS OF DENGUE FEVER PREVENTION CAMPAIGNS;

## A STUDY OF KNOWLEDGE AND PRACTICES IN URBAN/SEMI-URBAN COMMUNITIES OF LAHORE.

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**ABSTRACT... Objectives:** Dengue fever badly hits Pakistan in 2011. A large number of people died due to dengue fever. To control the alarming situation, other than treatment, work had been started at all levels. Department of Social Welfare and Bait-ul-Maal, Punjab was involved by the City District Government to work for the awareness among public for the preventive measures and practices to reduce the spread of the epidemic. Anti-dengue awareness campaigns were organized at the community level with the help of non-government organizations. A survey was conducted with the following objectives to evaluate the effectiveness of anti-dengue awareness activities: (1) Public knowledge of Dengue fever. (2) Anti-mosquito Preventive Practices. **Study Design:** A cross sectional household survey. **Setting:** Out of ten towns of Lahore city, Samanabad Town was selected. **Period:** Januarys to March 2014. **Methods and Material:** **Instrument:** A structured interview schedule of three sections was designed. Interviews were conducted from urban/semi-urban communities. **Sampling:** By using multistage random sampling, Out of ten towns of Lahore city, Samanabad Town was selected. Samanabad Town is consisted of 24 union councils with a population of 17 million. Three union councils: 86, 104 and 112 were randomly selected. 400 household were randomly selected from these union councils for interview to ensure representativeness of the sample. **Respondents:** Males/Females aged 15-65 & above lived in the households of Samanabad Town were the respondents. One respondent was selected from each household. **Method:** In this cross-sectional study, by using Taro Yamni Formula, 400 interviews were successfully conducted with a response rate of 100%. Other than demographics, 17-items questionnaire measured knowledge and practices about awareness and dengue prevention. Descriptive statistics and Pearson Correlation coefficient was used for the analysis of the data. Data was analyzed by using SPSS 20. **Results:** Maturity of the community members' 76 - 92% was aware and had knowledge of preventive measures. 66 - 83% practicing regularly in the households. Data analysis indicated a positive and significant association between knowledge about dengue prevention and practices about dengue eradication ( $r = 0.000$ ,  $p < .005$ ). **Conclusion:** Consistent awareness campaigns for dengue fever prevention and control enhances public knowledge and motivates individuals to adopt preventive practices in day to day routine life. To foster and maintain public interest, attractive beneficial public friendly practical economical practices need to be publicized to motivate young ones in communities. Orientation training programs of community paid health workers will be helpful to improve skills to assert effective dengue fever preventive measures and control activities to reduce the breeding sites of mosquitoes.

**Key words:** Awareness, Practice, Dengue, Fever, Samanabad Town.

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## INTRODUCTION

It was in Sept. 2011 when dengue fever hits Pakistan first time<sup>1</sup>. The province of Punjab was badly affected by the disease as more than 30,000 people were diagnosed with this disease. More than 350 people died because of it. Out of 21,204 cases which were reported in Nov. 2010, most

were from Punjab, Pakistan. According to the health department, 1816 cases were from Punjab, out of which 1600 were from Lahore alone. In this alarming situation, for dengue control, community participation and extensive community awareness and educational campaigns were the need of the time.<sup>2, 3</sup> Electronic and print media were actively

involved. Best and an effective way to control and prevent dengue is to reduce the breeding sites of mosquitoes<sup>4</sup>. Several studies suggest that awareness and better knowledge of dengue fever prevention practices among the public are effective predictors of dengue prevention and control.<sup>5,6,7, 8, 9, 10,11,12</sup>

Government of the Punjab decided to handle dengue fever at all levels as it has been emerged an important public health problem. Therefore, emphasis was given to primary preventions. District Coordination Officer issued instructions to all government departments for dengue eradication on emergency basis. Department of Social Welfare and Bait-ul-Maal started work for dengue eradication. Focus was on public awareness and preventive measures to reduce the spread of the epidemic. The Urban Community Development Project-3 took initiative and organized awareness campaigns, seminars/lectures, walks, spray, cleanliness campaigns, and registration of volunteers for dengue surveillance and training, and medical camps with the coordination of registered NGO's within operational area. To evaluate the effectiveness of anti-dengue awareness activities, a survey was conducted. Knowledge and practices survey provide a suitable format to evaluate the effectiveness of anti-dengue awareness activities. Findings from this study would provide useful baseline information, which could improve the Social Welfare Department interventions and programs for dengue prevention.

## RESEARCH OBJECTIVE

The objective of the study was to assess the effectiveness of the Government's anti-mosquito/dengue campaigns in respect of public knowledge about Dengue prevention and practices for dengue eradication. Findings from this study would provide useful baseline information, which could improve the awareness programs.

### Objectives

1. Public knowledge of Dengue Fever.
2. Anti-mosquito Preventive Practices.

## Research Design

### Study design and sample size

A cross-sectional household survey was conducted from January to March 2014. Multistage random sampling method was used to select one town out of ten. From selected town, three union councils were selected. From three union councils, 400 households were selected by using Taro Yamni Formula. From each household, one interview was conducted after getting verbal consent before participating in the study. Target respondents of this survey were males and females from the age of 15 to 65 years and above living in urban/semi urban communities of Lahore. Response rate was 100%. It took around 15 minutes to complete one questionnaire.

## QUESTIONNAIRE

Questionnaire of 17-items about knowledge and practices was designed. This questionnaire was based on the efforts had been made by the Social Welfare Department in communities with the help of NGO's so far (see table-I).

The items on the questionnaire developed for this study were divided into three main sections:

- 1) **Demographic factors:** that intended to discover the demographic and socio-economic characteristics (gender, age, education, occupation, marital status, and sources of dengue prevention information) of the respondents.
- 2) **Awareness:** defined as respondent's opinions about dengue fever prevention and daily care about dengue fever prevention, necessity of dengue precaution and recommended/non-recommended practice of action. This domain designed with "yes" and "no" response categories provided for each question (Q1, 3-4, 15). "Yes" have one point and "No" have zero point.
- 3) **Practice:** defined as respondent's practice towards dengue fever prevention such as action taken to avoid dengue fever occurrence (Q 2, 5-7, 9-14, and 16-17). This

S #	Activities	2012		2013		2014		Total	
		No.	Participants	No.	Participants	No.	Participants	No.	Participants
1	Seminars	39	2046	07	658	07	898	53	3602
2	Door-to-Door Awareness Campaigns	30	549	43	923	26	411	99	1833
3	Medical Camps	10	30000	06	15720	32	27	48	45747
4	Awareness Walks	05	1000	05	570	06	4808	16	6378
5	Dengue Surveillance in Households	224	2480 Households	13	1573 Households	95	2540 Households	332	6593
6	Volunteers Training Sessions	15	3275	08	2150	17	1346	40	6771
7	Spray in households, institutions, mosques, offices	97	7 million Population	06	1.2 million Population	Nil	Nil	12	8.2 million population
8	Cleanliness Campaigns	12	94	17	59	02	07	31	153

**Table-I. Activities for Dengue Awareness & Prevention in Samanabad Town (2012-2014)**

domain consists twelve items assessed by yes/no category. Data from the awareness/knowledge and practice domains were respectively summed into a percentage score to treat the variable as continuous data.

## STATISTICAL ANALYSIS

Data entry and analysis was done using the SPSS version 20. Frequencies and percentages were calculated for the demographic characteristics. Pearson's correlation coefficient was used to test the relationship between awareness/knowledge and dengue preventive practices, while Phi and Cramer's V was used to determine the significance of correlation. A p-value of equal to or less than 0.05 was considered statistically significant.

## RESULTS

A total of 400 respondents participated in this study. Table-II describes the demographic characteristics of the study population. Most of the respondents were married males between the ages of 35 to 44 years. 47% were highly qualified and doing business or employed. Majority 85% of the community members' source of information/awareness was through electronic media, 9% get aware from print media, 5% received information from Social Welfare Department efforts, and only 0.5% received information from some other source. [See Table-II]

Characteristics	Frequency	Percentage
<b>Gender</b>		
M	329	82.3
F	71	17.8
<b>Age (in Years)</b>		
15-24	50	12.5
25-34	88	12.0
35-44	98	24.5
45-54	89	22.3
55-64	49	12.3
65 & above	26	6.5
<b>Education</b>		
No Education	86	21.5
Primary	34	8.5
Secondary	92	23.0
College/University	188	47.0
<b>Occupation</b>		
Student	64	16.0
Unemployed/Retired	30	7.5
House Wife	49	12.3
Laborer	70	17.5
Business/Employed	187	46.8
<b>Marital Status</b>		
Never Married	81	20.3
Ever Married	31	79.8
<b>Sources of Information</b>		
Electronic Media	341	85.3
Print Media	37	9.3
Social Welfare Teams	20	5.0
Any Other	2	0.5

**Table-II. Demographic Characteristics of the study sample**

Table-III shows that maturity of the community members' 76 to 92% were aware and had knowledge how to prevent from dengue fever. For control and eradication, 66 to 83% adopted preventive measures and practicing regularly in the households. [See Table-III]

Knowledge/Awareness	Yes (%)	No (%)
Is there leakage of water from taps or motor pumps?	8	92
Is there any uncovered water reservoirs in the household?	10	90
Is there any uncovered manhole?	11	89
Is there any stagnant water in plants containers?	24	76
<b>Practices of Preventive Measures</b>		
Mosquito Spray behind curtains, sofas, and under beds	66	34
Keep lawn dry	82	18
Sweep out water	84	16
Have proper rain water drains	76	24
Sweep out old tires from roof	65	35
Keep dry manhole covers	76	24
Regular checking moisture below plant containers	75	25
Clean rubble from roof tops	83	17
Wipe out water under dustbins	80	20
Wear full sleeves dress	85	15
Use of mosquito repellent	63	37
Keep dry refrigerators tray and room coolers	75	25
Use of Nets at windows and doors	74	26

**Table-III. Frequency table of Awareness and Practices**

Table-IV shows the correlation between knowledge and practices is positive and statistically significant ( $r = 0.000$ ,  $p < .005$ ). This indicates direct relationship between knowledge and practices. [See Table-IV]

	1	2
1. Knowledge	-	
2. Practices	.000**	-

**Table-IV. Correlations between Knowledge and Practices**

\* $p < 0.05$ ; \*\* $p < 0.01$

## DISCUSSION

Present study evaluated the effectiveness of anti-dengue campaigns to raise public awareness or knowledge and adoption of practices for dengue prevention at Samanabad Town, Lahore, Pakistan. Results of this study demonstrated that respondents were knowledgeable about dengue fever and equipped with preventive measures. Findings of this study consistent with Van Benthem (2002)<sup>7</sup> study results that people with higher knowledge on dengue were better equipped with its preventive measures than those with lesser knowledge. Results indicated that half of the respondents were highly qualified. This finding also endorsed by the results of Chusongsang (2005)<sup>8</sup> study that an educated head of the household with high level of knowledge was better at carrying out dengue prevention practices. Maturity (83%) of the community members adopted preventive practices which are consistent with Itrat and Colleagues (2008)<sup>9</sup> study in which they agreed with the fact that preventive practices with regard to dengue control and eradication were consistent with a better knowledge about these practices. Results are consistent with a previous study conducted in Pakistan. <sup>7</sup> Studies conducted in Jamaica <sup>9</sup>, Saudi <sup>13</sup>, and Sri Lanka <sup>14</sup> indicated that radio and television were the main sources of information on dengue. Other studies conducted in Brazil <sup>15</sup>, Thailand <sup>16</sup>, and India<sup>17</sup> indicates different results that better knowledge does not necessarily lead to better practice. Punjab, Pakistan better results are due to intensified day and night dengue awareness campaigns and consistent efforts and initiative of government of the Punjab who fostered consistent massive media campaigns to raise awareness/knowledge and preventive measures for dengue eradication.

## CONCLUSION

It could be inferred from this investigation that the level of knowledge about dengue and preventive practices among the study population was rather high. For complete eradication, emphasis should be given to keep on consistent efforts, practical demonstrations and promotion of good practices especially among young members to control the

epidemic<sup>18, 19, 20, 20, 21, 22</sup>. Motivational aspects are considerable such as public friendly practical economical methods need to be introduced. Government agencies and other non-government organizations should strengthen their programs on massive educational campaigns to increase awareness and knowledge regarding dengue and preventive measures to reduce mosquito breeding sites. Print materials needs to be provided in schools, health and community centers making it more accessible for the public to obtain information. For health education and health promotion, knowledge of dengue fever and the cause i.e mosquito, its prevention and control of, should be a compulsory feature of school curriculum.<sup>23, 24</sup> Health departments carry out regular exercises of paid community health workers for reorientation and retraining to improve their technical skills, capability and ability to supervise prevention and control activities regularly.

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“The starting point of all achievement is desire.”

Napoleon Hill

#### AUTHORSHIP AND CONTRIBUTION DECLARATION

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1	Dr. Bushra Yasmeen	Introduction, methodology, discussion and conclusion.	
2	Dr. Nermeen Jamshaid	Data collection, data entry in SPSS & result.	
3	Dr. Muhammad Zohaib Khan	Data collection, data entry in SPSS & result.	
4	Dr. Munnaza Salman	Literature review & referencing.	
5	Dr. Raza Ullah	Final reading and approval.	