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A Pre-Experimental Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Dengue Fever among High School Children of Mukerian, District Hoshiarpur, Punjab

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ABSTRACT

Background of the study:
Disease is considered as any harmful deviation from the normal structural or functional state of an organism that is found to be associated with certain signs and symptoms. One of the most prevalent infectious diseases is "Dengue Fever". Dengue fever is a mosquito-borne disease caused by dengue virus and is prevalent in tropical and subtropical areas.

Aim of the study:
The aim of this study was to assess the effectiveness of structured teaching programme on knowledge regarding dengue fever among High School children.

Material and methods: A quantitative research approach that includes utilizing a pre-experimental one-group pre-test-post-test design was used. Non-probability convenient sampling technique was employed to select 40 High School children. Knowledge-based questionnaire was used to collect data. Analysis was done using both descriptive and inferential statistics.

Findings: In the pre-test, 20% of the high school children had poor knowledge, whereas 35% had average knowledge and 45% of them had good knowledge about dengue fever. After the implementation of a structured teaching programme, 50% of high school children had average knowledge, along with the remaining 50% who had good knowledge and no one i.e. 0% had poor knowledge regarding dengue fever in the post-test. The difference in mean knowledge scores between pre-test and post-test was statistically significant at $p<0.05$ level of significance.

Conclusion: The knowledge of high school children regarding dengue fever was improved as a result of a "structured teaching programme". Thus, structured teaching programme was found to be an effective tool in improving the knowledge of high school children regarding dengue fever.

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KEYWORDS: *Knowledge, Dengue Fever, High School Children*

BACKGROUND

Dengue fever is commonly known as 'Break Bone Fever'. It is an infectious disease caused by Arbovirus from the genus Flavivirus. It is transmitted by mosquito i.e. Aedes aegypti closely associated with human habitation. Dengue fever is caused by four antigenically related but distinct dengue virus transmitted by infected mosquitoes. The incidence of dengue has been grown dramatically around the world. About half of the world's population are now at risk of dengue with the current estimation of more than 100 million dengue infections occurring worldwide every year.[1]

According to the data from National Vector Borne Disease Control Programme and National Health Profile in 2017, about 1,88,401 cases of dengue fever

were reported and 350 deaths were occurred in India. However, in 2021; 23,389 dengue cases have been reported in Punjab, India.[2] There is high mortality and morbidity associated with the onset of each dengue outbreak leading to great socio-economic impact. The risk of Dengue Fever has increased due to some factors like rapid urbanization, lifestyle changes, inadequate water management and improper water storage practices in urban and rural areas.[3]

At present, the methods which can be used to control or prevent the transmission of Dengue Virus include environmental management and modification, disposing of solid waste properly, covering, emptying and cleaning of the domestic water storage containers on a weekly basis. Along with these preventive strategies, the personal prophylactic measures can be used like wearing of full sleeve shirts and full pants; use of mosquito repellent creams; coils; use of bed nets during sleeping time to prevent from mosquito bite, etc.[4]

For the past ten years, the number of dengue cases among school children has also gradually increased in India. In this regard, and in order to bring awareness about the preventive measures regarding dengue fever in the community, a considerable body of research has been directed towards assessing the existing knowledge regarding dengue fever and its prevention among the high school children while evaluating the effectiveness of structured teaching programme thus, improving their existing body of knowledge to help them in preventing the occurrence of disease and maintaining their good health status.[5]

OBJECTIVES

- To assess the pre-test level of knowledge regarding dengue fever among high school children.
- To assess the post-test level of knowledge regarding dengue fever among high school children.
- To compare the pre-test and post–test level of knowledge regarding dengue fever among high school children.
- To find out the relationship between the pre-test and post-test level of knowledge regarding dengue fever among high school children with selected demographic variables.

MATERIALS AND METHODS

A quantitative research approach that includes utilizing a pre-experimental one-group pre-test-post-test design was used. Total 40 High School children were selected by non-probability convenient sampling technique. Data was collected by using knowledge-based questionnaire. Analysis was done using both descriptive and inferential statistics. This study was conducted in selected Senior Secondary School at Mukerian, Hoshiarpur, Punjab and 9th and 10th class children were taken as sample for study.

TOOL

A self-structured knowledge questionnaire was used to collect data. Tool was divided into 2 parts:

Part I: Demographic Variables, which consisted of 6 items about socio-demographic data of the high school children.

Part II: Self Structured Knowledge Questionnaire, which included questions on dengue fever. The questionnaire consisted of 20 items, with each item having one correct answer among the four options and each correct answer carried 1 mark and unattempted or wrong answer carried 0 mark.

The **Criterion measure** used in the present research study was that if the high school children scored ≤9 mark on knowledge items in self-structured knowledge questionnaire then, it was considered to have poor knowledge; if scored between 10-14 then, they were considered to have average knowledge and if scored ≥15 then, they were said to have good knowledge. The necessary ethical clearance was taken from the research and ethical committee; from the Principal of Senior Secondary School at Mukerian, Punjab along with which the written consent was also obtained from parents of high school children who were willing to participate in the study. They were also informed that their children have right to refuse their participation in current study and were assured that data collected from them would be kept confidential and used for research purpose only.

RESULTS

A. Frequency and percentage distribution of sample characteristics:

Table-1

N=40

SAMPLE CHARACTERISTICS	FREQUENCY (n)	PERCENTAGE (%)
Age (In Years)		
14-15	25	62.5
15-16	15	37.5
Gender		
Male	16	40.0
Female	24	60.0
Standard		
9th standard	20	50
10th standard	20	50
Parental Education		
Illiterate	0	0
Middle School	15	37.5
High School	15	37.5
Graduate and above	10	25
Family Income		
≤ Rs. 10,000	16	40
Rs. 10,001-20,000	08	20
Rs. 20,001-30,000	10	25
≥Rs. 30,000	06	15
Source of Information		
Television and Radio	25	62.5
Magazines, Newspaper and Internet	10	25
Friends, Relatives and Health personnel	05	12.5
Not any source	0	0

Table-1 depicts that 62.5% of the subjects were in the age group of 14-15 years and 37.5% were in the age group of 15-16 years with 60.0% of them being females and 40.0% being male participants. Out of all subjects, 50% were in 9th standard and 50% were in 10th standard. According to the level of parental education, highest frequency of education is 37.5% from high school, 37.5% from middle school, 25% had been in graduate & above and 0% from illiterate group. As per Family Income, 40% had monthly income of less than and equal to Rs. 10,000 per month followed by 20% having monthly income of Rs. 10,001-20,000, 25% had monthly income of Rs. 20,001-30,000 and remaining 15% had more than or equal to Rs. 30,000 per month. Also, 62.5% subjects had received information regarding dengue fever from Television, 25% received information from Printed medias i.e. newspapers, magazines, 12.5% received information from friends/ relatives/ health care personnel and no (0%) subject participant was seen without any source of information.

FINDINGS

Objective-1: To assess the pre-test level of knowledge regarding dengue fever among high school children.

Table: 2 Frequency and Percentage distribution of high school children according to overall pre-test knowledge score regarding dengue fever.

N=40

Pre-test			
Level of knowledge	**Criterion measure**	**Frequency(n)**	**Percentage (%)**
Good	15-20	18	45
Average	10-14	14	35
Poor	0-9	08	20

Maximum knowledge score = 20
Minimum knowledge score = 0
Table-2 depicts that in the pre-test, 20% high school children had poor knowledge, 35% had average knowledge and 45% of them had good knowledge.

Objective-2: To assess the post-test level of knowledge regarding dengue fever among high school children.

Table: 3 Frequency and percentage distribution of high school children according to overall post-test knowledge score regarding dengue fever.

N=40

Post -test			
Level of knowledge	**Criterion measure**	**Frequency(n)**	**Percentage (%)**
Good	15-20	20	50
Average	10-14	20	50
Poor	0-9	0	0

Maximum knowledge score = 20
Minimum knowledge score = 0
Table-3 reveals that in the post-test 0% high school children had poor knowledge, 50% had average knowledge, and 50% of them had good knowledge.

Objective-3: To compare the pre-test and post-test level of knowledge regarding dengue fever among high school children.

Table: 4 Comparison of mean pre-test and post-test knowledge score of high school children regarding dengue fever to find out the effectiveness of structured teaching programme.

N=40

Knowledge Score							
	Pre-test		**Post-test**		**Mean difference**	**t**	**Df**
	Mean	**SD**	**Mean**	**SD**			
Dengue fever score	9.85	5.803	12.575	2.94	2.725	6.013*	39

***Significant at p<0.05 level of significance**

Maximum knowledge score = 20
Minimum knowledge score = 0

Table-4 depicts that the mean pre-test and mean post-test score of high school children regarding dengue fever were 9.85 and 12.575 respectively. The difference between the mean pre-test and post-test knowledge score was 2.725 and the calculated 't' value was 6.013 which was statistically significant at p<0.05 level of significance. Hence, the H_1 hypothesis was accepted.

Objective-4: To find out the relationship between the pre-test and post-test level of knowledge regarding dengue fever among high school children with selected demographic variables.

Table: 5 Association of knowledge of high school children regarding dengue fever with their selected socio-demographic variables.

Knowledge score										
Sample characteristics	**Pre-test score**					**Post-test score**				
	n	**Mean**	**SD**	**df**	**Test**	**n**	**Mean**	**SD**	**df**	**Test**
Age(in yrs)										
14-15	25	14.5	4.61	3	0.521	25	20.45	3.06	3	0.491
15-16	15	13.76	3.63	36		15	21	2.38	36	
Gender										
Male	16	14.31	3.98	1	0.7596	16	20.83	2.82	1	0.0461
Female	24	13.14	4.24	38		24	-	-	38	
Standard										
9^{th} standard	20	14	7.07	1	0	20	21	4.24	1	0.1529*
10^{th} standard	20	14	3.99	38		20	21.03	2.95	38	
Parental Education										
Illiterate	0	11.66	7.09	4	0.546	0	19	5	4	0.310
Middle School	15	21	3.24	35		15	20.95	2.99	35	
High School	15	14.10	4.44	-		15	20.65	2.54	-	
Graduate & above	10	14.11	4.53	-		10	20.85	2.30	-	

Family income										
≤Rs.10,000	16	12.36	4.00	4	2.758	1	19.56	3.21	4	2.197
Rs. 10,001-20,000	8	21.91	28	15.45		3.68	56	0.51	36	
Rs.20,001-30,000	10	13.66	3.74	-		10	20.55	2.14	-	
≥Rs.30,000	6	17	2.94	-		6	21.85	1.70	-	
Sources of information										
Television, Radio	25	14.10	4.63	3	2.628	25	20.45	3.00	3	2.491
Magazines, Newspaper and Internet	10	13.66	3.64	-		10	20.55	2.14	-	
Friends, Relatives and Health personnel	5	-	-	-		5	-	-	-	
Not any source	0	16.33	2.51	-		0	20.76	1.15	-	

***Significant at p<0.05 level of significance**

Hence, it can be inferred from the above table that age, gender, family income, parental education, sources of information had statistically non-significant relationship with level of knowledge regarding dengue fever among high school children at p<0.05 level of significance. On the other hand, Standard have statistically significant relationship at p<0.05 level of significance.

DISCUSSION

For the past ten years, the number of dengue cases among school children has gradually increased in India. Hence, there is a need to educate the high school children regarding the preventive measures of dengue fever to prevent disease and to maintain good health status. Keeping in view of the above needs of educating the high school children regarding dengue fever and its prevention, the investigator had taken this study to evaluate the effectiveness of structured teaching programme on dengue fever.

In the present study, during pre-test, 20% high school children had poor knowledge, 35% had average knowledge and 45% of them had good knowledge. However, in the post-test results, 50% high school children had average knowledge, and 50% of them had good knowledge regarding dengue fever.

Also, the current study showed that the mean pre-test and mean post-test score of high school children regarding dengue fever was 9.85 and 12.575 respectively. The difference between the mean pre-test and post-test knowledge score was 2.725 and the calculated 't' value was 6.013 which was statistically significant at p<0.05 level of significance. Hence, the H_1 hypothesis was accepted.

The findings of the present study indicate that only "Standard" of education of students had shown a great impact on their level of knowledge regarding dengue fever which was statistically significant at p<0.05 level of significance.

CONCLUSION

Structured teaching programme was found to be an effective tool in improving the knowledge of high school children regarding dengue fever.

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