A Quasi-Experimental Study to Assess the Effectiveness of structured Teaching Programme on Prevention and Control of Dengue Fever Among Adolescents inselected Schools of Ludhiana, Punjab.

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Abstract:*World health organization reported that each year millions of cases of dengue fever occur mostly among children and young adults. Dengue awareness activity should be included at the school and college level. The objectives of study were to assess and compare the pretest and posttest knowledge among adolescents of control and experimental group on prevention and control of dengue fever, to find out the relationship of pretest and posttest knowledge among adolescents on prevention and control of dengue fever with selected variables. A Quasi experimental nonequivalent pretest and posttest design was used. The study was conducted at selected schools, Ludhiana, Punjab.60 adolescents were selected using purposive sampling. Structured knowledge questionnaire was prepared by investigator and validate by the various experts in the specific field. Descriptive and inferential statistics was used to analyze the data. Finding revealed that knowledge of adolescents on prevention and control of dengue fever was average before structured teaching programme but after the structured teaching programme knowledge was good and excellent. The posttest knowledge score of adolescents was significantly higher than pretest mean knowledge score at p<0.001 level. Structured teaching programme is effective in increasing the knowledge of adolescents on prevention and control of dengue fever.*
Keyword:*Adolescents,Effectiveness,Dengue fever,Schools,Structured teaching programme*

I.   Introduction

Dengue virus infection is increasingly recognized as one of the world's emerging infectious disease. About 50-100 million cases of dengue fever and 500,000 cases of dengue haemorrhagic fever resulting in around 24,000 deaths, are reported annually**.**[1]The highest incidence was observed among adolescents and young adults and an increase in dengue morbidity and mortality was observed in the Americas in the last three decades.[2]A retrospective study was conducted and data was collected from the medical records department of University Malaya Medical Center. The greatest number of dengue fever cases (38%, n=392) were seen in the 20-29year age group, while the greatest number of dengue haemorrhagic fever cases (32%, n=76) were in the 10-19 year age group. The majority of patients infected were students (30%, n=385). All patients with dengue fever and dengue haemorrhagic fever presented with fever.[3]

1.2 Need of the study

Out breaks of dengue fever and dengue haemorrhagic fever that occurred during 1996 and 1999 in Chandigarh (North India) of the total of 338 patients, 50 patients were investigated during the outbreak in 1996 and 288 in 1999. Children less than 10 years of age constituted 17.6% of the total number of patients while 20.4%, 29.3% and 18.8% patients were in age group of in 11-20; 21-30 and 31-40 years respectively.[4]Health education is a major means for prevention and control of the National Dengue Control Program, and is delivered to communities and in schools. We suggest the need for sustained routine education for dengue prevention and control, and the need for approaches to ensure the translation of knowledge into practice.[5]While working in the community investigator observed that adolescents are more vulnerable to acquire dengue infection due to lack of proper knowledge and guidance. So, the investigator felt the need toundertake this study to provide them education to improve their knowledge so that can prevent future threat to country and world.

1.3 Purpose

The purpose of the study is to assess the effectiveness of a structured teaching programme on prevention and control of dengue fever among adolescents.

1.4Hypothesis

H₁-The posttest knowledge of adolescents of experimental group on prevention and control of dengue fever will be significantly higher than adolescents of control group as measured by structured questionnaire at

p<0.05 level.**H$_o$** –There will be no statistical significant difference in posttest knowledge score of adolescents in experimental and control group as measured by structured questionnaire at p<0.05 level.

1.5 Conceptual Framework

Conceptual model of study is based on general system theory by Ludwig Von Bartalanffy (1968).[6]

II. Methodology

Research approach: A Quasi-experimental research approach was adopted.

Research design: A Non equivalentpretest & posttest design was prepared.

Sample size: The Investigator selected a sample of 60 adolescents, 30 for control and 30 for experimental group.

Sampling technique: Purposive Sampling Technique.

Description of tool: Tool consists of two parts,

Part-I Sample Characteristics,this part obtaining personal information i.e. age, gender, standard, family income, religion, education of father, education of mother, occupation of father, occupation of mother and source of information andPart-II Questionnaire, this part consisted of structured questionnaire on different aspects of prevention and control of dengue fever to assess the knowledge of adolescents. This questionnaire consisted of 38 items, each item contains one correct answer among the four choices and each correct answer carries one mark each and wrong answer carries zero mark.

Maximum Score = 38

Minimum Score = 0.

Ethical consideration: Prior to the data collection formal written permission was obtained from the concerned authority of the selected schools and informed consent from the participants. They were also assured for confidentiality of the information.

Data collection: The study was conducted in two schools i.e. Sargodha National Public Senior Secondary School at Field Ganjtaken as experimental group and ShivalikVidyaMandir School at Jamalpur selected as control group.Pretest of control and experimental group were taken. Structured teaching programme was implemented in participants of experimental group only on the same day of the pretest. Posttest was conducted after seven days of the pretest in both group.

Pilot study: Pilot study was conducted on 6 adolescents in the selected schoolsto ensure the reliability of the tool and feasibility of the study. The reliability of the structured questionnaire was 0.9

III. Results and findings

Table : 1 Frequency and Percentage Distribution of Sample Characteristics

N=60

Characteristics	Control Group n=30		Experimental Group n=30		df	χ^2
	f	%	f	%		
Age (in years)						
13-14	9	30	17	56.7	1	4.344**
15-16	21	70	13	43.3		
Gender						
Male	16	53.3	13	43.3	1	0.601[NS]
Female	14	46.7	17	56.7		
Standard						
8th	10	30.0	10	30.0		
9th	10	33.3	10	33.3	3	1.048[NS]
10th	10	36.7	10	36.7		
Family income (per month)						
Rs≤5000	16	53.3	7	23.3		
Rs5001 -10000	8	26.7	8	26.7	3	7.940*
Rs10001 -15000	4	13.3	7	23.3		
Rs≥ 15001	2	6.7	8	26.7		
Religion						
Hindu	18	60	7	23.3		
Muslim	2	6.7	1	3.3	3	9.679**
Sikh	9	30.0	20	66.7		
Christian	1	3.3	2	6.7		
Education of Father						
Illiterate	3	10.0	1	3.3		
Primary to middle	9	30.0	10	33.3	3	7.783[NS]
Matric to 10 +2	17	56.7	11	36.7		
Graduate and above	1	3.3	8	26.7		

Education of mother					
Illiterate	3	10.0	1	3.3	
Primary to middle	7	23.3	5	16.7	3	5.051[NS]
Matric to 10 +2	18	60.0	16	53.3	
Graduate and above	2	6.7	8	26.7	
Occupation of father					
Unemployed	4	13.3	1	3.3	
Labourer	1	3.3	2	6.7	3	6.242[NS]
Service	18	60	12	40	
Business	7	23.3	15	50	
Occupation of mother					
Housewife	3	10.0	4	13.3	
Labourer	22	73.3	16	53.3	3	4.424[NS]
Service	5	16.7	7	23.3	
Business	-	-	3	10.0	
Source of information					
Newspaper &magazine	5	16.7	2	6.7	
TV& Radio	10	33.3	11	36.7	3	9.645[**]
Parents & teacher	9	30.0	2	6.7	
Health personnel	6	20.0	15	50	

NS = Non Significant   *at p <0.05,   **at p<0.01

Table 1 depict that Chi Square was calculated for all variables which was significant in age, family income, religion, source of information and non-significant in gender, standard, education of father, education of mother, occupation of father and occupation of mother.

Table: 2(a)Frequency and Percentage Distribution of Adolescents in Pretest and Posttest Knowledge Score on Prevention and Control of Dengue Fever in Control Group According to Levels of Knowledge

N=30

		Adolescents			
		Pretest		**Posttest**	
Levels	**Score**	**n**	**%**	**n**	**%**
Excellent	≥ 32	1	3.3	1	3.3
Good	26 - 31	3	10.0	6	20.0
Average	20 - 25	22	73.3	18	60.0
Below Average	≤ 19	4	13.3	5	16.7

Table 2(a)show that in control group maximum adolescents (73.3%) had average pretest knowledge followed by below average (13.3%), good (3%) and excellent (1%). In posttest maximum (60%) adolescents had average knowledge followed by good (20%), below average (16.7%) and excellent (3.3%). Thus, it can be inferred that majority of adolescents had average knowledge on prevention and control of dengue fever in control group.
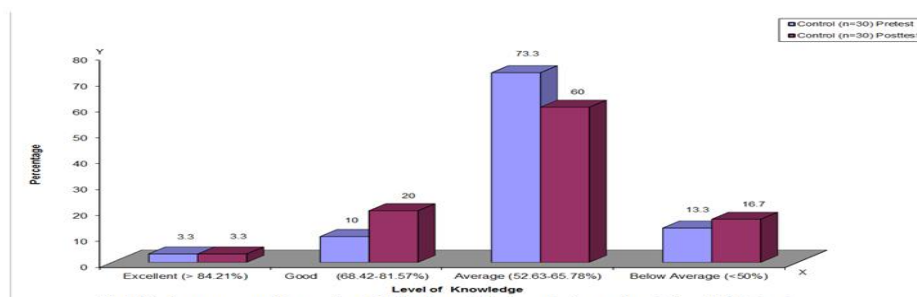

Fig. 2(a): Frequency and Percentage Distribution of Adolescents According To Level of Pretest Knowledge Score on Prevention and Control of Dengue Fever in Control Group

Table: 2(b)Frequency and Percentage Distribution of Adolescents in Pretest and Posttest Knowledge Score on Prevention and Control of Dengue Fever in Experimental GroupAccording to Level of Knowledge

N=30

		Adolescents			
		Pretest		**Posttest**	
Levels	**Score**	**n**	**%**	**n**	**%**
Excellent	≥ 32	-	-	11	36.7
Good	26 - 31	1	3.3	13	43.3
Average	20 - 25	20	66.7	6	20.0
Below Average	≤ 19	9	30	-	-

Table 2(b) depict that in experimental group maximum adolescents (66.7%) had average pretest knowledge followed by below average (30%), good 3.3%. In posttest maximum (43.3%) adolescents had good knowledge

followed by excellent (36.7%), average (20%). Thus, it can be inferred thatmajority of adolescents had average pretest knowledge while good posttest knowledge whereasstructured teaching was effective in increasing the knowledge of adolescents on prevention and control of dengue fever.
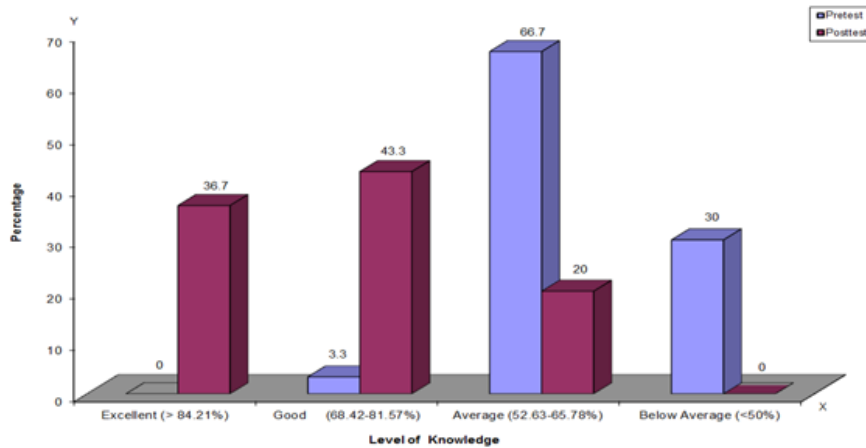

Fig. 2(b)Frequency and Percentage Distribution of Adolescents According To Level of Pretest Knowledge Score on Prevention and Control of Dengue Fever in Experimental Group

Table: 3Comparison of Pretest and Posttest Mean Knowledge Score of Adolescents on Prevention and Control of Dengue Fever between Control and Experimental Group

N=60

	KNOWLEDGE SCORE						
	Pretest			Posttest			
Group	n	Mean	SD	Mean	SD	df	't'
Control	30	a 16.07	3.51	c17.23	3.72	29	2.049 NS
Experimental	30	b15.40	2.47	d23.40	4.90	29	9.649***
		df	't'	df	't'		
	(a+b)	58	.855 NS	(c+d) 58	5.49***		

NS= Non Significant   * at p<0.001**

Table 3 reveal that in control group, the pretest mean knowledge score was 16.07 and posttest mean knowledge score was 17.23. This difference between pretest and posttest mean knowledge score was statistically non significant.In experimental group, the pretest mean knowledge score was 15.40 and posttest mean knowledge score was 23.40. This difference was statistically significant at p<0.001.The difference of pretest mean knowledge score of adolescents in control and experimental group was statistically non significant.The difference of posttest mean knowledge score of adolescents in control and experimental group was statistically significant at p<0.001.Hence, research hypothesis was accepted. So it can be concluded that structured teaching had an impact on the knowledge of adolescents on prevention and control of dengue fever.
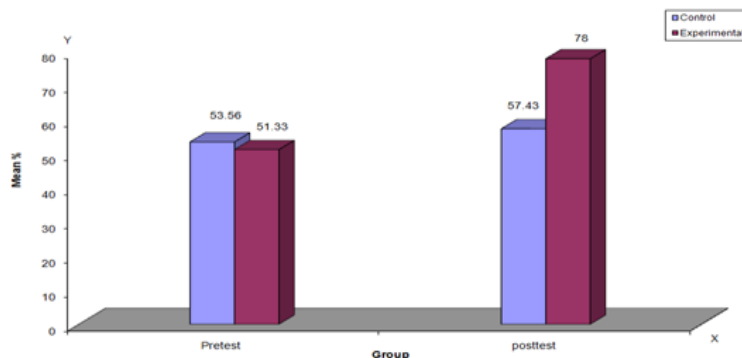

Fig. 3: Mean Pretest and Posttest Knowledge Score of Adolescents Regarding Prevention and Control of Dengue Fever of Control and Experimental Group

3.1Nursing Implications
* Nursing curriculum should lay stress on various aspect of adolescent's health.

- There is need to include this aspect of adolescents health in school curriculum to enhance adequate knowledge and healthy practical. There is need to fill the post of school health nurse who can guide the adolescents on prevention and control of dengue fever.
- The need of well-organized teaching programme is felt to promote the knowledge adolescents in school.
- The information contained in the study can be valuable source of data for the future researcher.

3.2 Recommendations
- The study can be replicated on large sample to validate to generalize its findings.
- A comparative study can be conducted to assess the knowledge of adolescents on prevention and control of dengue fever in rural and urban community.
- An exploratory study can be done to assess the knowledge and practices of adolescents on prevention and control of dengue fever.

3.3Delimitations
- This study is limited to the adolescents in the age group of 13 years to 16 years.
- The adolescents who are willing to participate in the study will be included in the study.

3.4Limitation
The size of sample was 60, hence it was difficult to make broad generalization

IV. Discussion

The pretestmean knowledge score of control group was 16.07 and experimental group was 15.40. Most of adolescents in both control and experimental group (73.3%, 66.7%) had average pretest knowledge related to prevention and control of dengue fever among adolescents. Similar findings were reported by **(Ibrahim NK et al, 2009)[7]**that pretest knowledge score was poor, fair and satisfactory for 42.3%, 57.6% and 0.1% of total sample.The posttest mean knowledge score of adolescents of control group was 17.23 and experimental group was 23.40. In control group most of adolescents (60.00%) obtain average posttest knowledge score and in experimental group most (43.3%) of adolescents obtained good posttest knowledge score.

The difference between the pretest mean knowledge score of both control and experimental group was statistically non significant. However the difference in posttest knowledge score of both control and experimental group was statistically significant at $p<0.001$. Hence, research hypothesis was accepted that posttest knowledge score of experimental group will be significantly higher than knowledge score of control group. The above findings were similar to these stated by **(Therawiwat M et al, 2005)[8]**that before the experiment the comparison group a little higher knowledge mean score (7.09) than the experimental group(6.87). After the study the experimental group gained higher knowledge mean score from (6.87 to 9.58) than comparison group.

Age was found to have significant relationship between pretest knowledge score of adolescents in control group but not in experimental group.Similar findings have been reported by **(Syed Madiha et al, 2010)[9]**reveals that age and gender had relationship with knowledge of adolescents on prevention and control.Standard was found to have significant relationship between pretest knowledge score of adolescents in control group but no impact in experimental group.

V. Conclusion
1. The difference between pretest knowledge score of control and experimental group was statistically non-significant but the difference between posttest knowledge score of both groups was statistically significant at $p<0.001$ level. Thus structured programme was significantly effective in increasing the knowledge level of experimental group on prevention and control of dengue fever among adolescents.
2. There was statistically significant effect of age (in years) and standardon prevention and control of dengue fever among adolescents.

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