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Research Paper

An Impact of Educational Intervention Programme Regarding Dengue and Its Prevention for Urban High School Children, Pune, Maharashtra

Medical Science

KEYWORDS : Dengue fever, urban, Knowledge

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ABSTRACT

Introduction: *Dengue is the most important emerging tropical viral disease of humans in the world today. Severe dengue is a leading cause of serious illness and death among children. Objectives: To assess the level and retention of knowledge of high school children regarding dengue before and after the educational program. Material &methods: - Interventional Study conducted among high School children. Pretest was taken by using structured questionnaire. Two post- tests were conducted one immediately after educational program and another after15 Days by using same questionnaire. Data Analysis: paired t-test was used. P value <0.05 was considered as significant.*

Result: *Study revealed that pre-test knowledge mean score was found 12.11. In the post test, mean of knowledge score was found 15.41.For retention of knowledge post-test 2 mean knowledge score was found 15.25.Both post- test mean of knowledge score was found statistically significant.*

Conclusion: *Educational programme should be conducted at regular interval in schools to increase children's knowledge for fighting against dengue.*

INTRODUCTION

Dengue is one of the most important emerging tropical viral diseases of humans in the world today. Severe dengue is a leading cause of serious illness and death among children in some Asian and Latin American countries. All four dengue virus (Den 1,2,3,4) infections may be asymptomatic or may lead to undifferentiated fever, dengue fever (DF), or dengue haemorrhagic fever (DHF) with plasma leakage that may lead to hypovolemic shock i.e. Dengue Shock Syndrome (DSS).The incidence of dengue has grown dramatically around the world in recent decades. Over 2.5 billion people – over 40% of the world's population – are now at risk from dengue. WHO currently estimates there may be 50–100 million dengue infections worldwide every year1.An estimated 500 000 people with severe dengue require hospitalization each year, a large proportion of whom are children, About 2.5% of those affected die1. In India during 2013 total 75808 dengue cases and 193 deaths were reported2. Maharashtra accounted for 5610 dengue cases and 48 deaths2. There is no specific treatment for dengue/ severe dengue, but early detection and access to proper medical care lowers fatality rates below 1%.Dengue prevention and control solely depends on effective vector control measures.

School-based education is an important compliment to community education because of the presumed transfer of knowledge and practice from classrooms to homes. Also the control measures such as source reduction require ongoing household activities. As the disease is predominantly affecting children nowadays1current study was conducted with objective of enhancing knowledge of high school children about dengue and its prevention.

OBJECTIVES

- To assess the level of knowledge of high school children regarding dengue and its prevention before the administration of educational program.
- To assess the level of knowledge regarding dengue fever and its prevention among high school children immediately after educational program.
- To assess the level of retention of knowledge among school children 15 days after the educational programme.

MATERIAL AND METHODS

Study Design: School based interventional Study.

Study Area: A school located in the field practice area of UHTC of Private Medical College in Pune.

Study Period: 1month

Study Population: School children from 8th to 10th standard from randomly selected English medium school.

Sample size: 204 high school children from 8th to 10th standard were included in the study.

Study tools: -A predesigned pretested questionnaire was used to collect information from the study participants. The questionnaire has been used in an earlier study done in Kolkata3 with few modifications made as per requirements of the present study. The questionnaire consists of two parts: part I includes socio demographic information and part II includes 22 dengue related questions such as mode of transmission, breeding places, control and preventive measures.

For each question, options were given. For each correct answer, the score was given one, if answer is wrong, the score was Zero.

Subjects were categorized according to their score percentages as follows;

Adequate knowledge -76% to 100%
Moderate knowledge -51% to 75%
Inadequate knowledge- 0 to 50%

DATA COLLECTION

Ethical committee approval was obtained before initiating the study. Permission from school authority was taken before initiat-

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ing study. Participants were briefed about the nature of the study and consent from guardian was taken. Pre-test was taken by using structured questionnaire. On the same day educational program was conducted for school children which include a power point presentation evaluated by scientific committee of community medicine department. Two post-tests were administered, one immediately after educational program and another after15 Day of educational program by using same questionnaire.

Data Analysis: To assess student's knowledge regarding dengue fever before and after intervention, paired t-test was used. P value <0.05 was considered as significant.

RESULTS

Table: 1 Distribution of students according to the gender and standard

Standard	Gender		Total
	Male	Female	
8th	57(46.72%)	35(42.68%)	92(45.1%)
9th	52(42.62%)	30(36.58%)	82(40.2%)
10th	13(10.65%)	17(20.73%)	30(14.7%)
Total	122(59.8%)	82(40.2%)	204(100%)

Total 204 students were included in the study. Majority were males122 (59.2%) and maximum of student were from 8th and 9th-standard i.e. 92 (45.1%) and 82 (40.2%) respectively. (Table no. 1)

Table no 2 Assessment of knowledge scores of Students in pre-test and post-test

Level of knowledge	Pre- test	Post- test 1	Post- test 2
Inadequate (≤ 50 %)	79 (38.73%)	20 (9.80%)	28 (14.43%)
Moderate (51 %-75%)	112 (54.90%)	131 (64.22%)	114 (58.76%)
Adequate (> 75%)	13 (6.37%)	53 (25.98%)	52 (26.80%)
Total	204	204	194*

*In post-test 2, only 194 students have participated, as 10 students were absent.

13 students (6.37%) had adequate knowledge in pre-test but in both post test1 & 2, number of students with adequate knowledge had increased to 53(25.98%) and 52(26.80%) respectively. Number of Students with inadequate knowledge had decreased from 79(38.73%) to 20(9.80%) and 28(14.43%) respectively, it shows that student's knowledge had improved after educational programme. (Table no.2)

Table no.3 Comparison of pre- test and post- test intervention knowledge score

Intervention	Mean	N	SD	P-value
Pre- test	12.11	204	3.170	< 0.001
Post-test1	15.41	204	3.083	
Pre test	12.11	204	3.17	< 0.001
Post-test 2	15.25	194	3.28	

The mean of pre-test knowledge was 12.11 out of 22. After educational programme the mean score for post-test 1 and 2 had increased to 15.41 and 15.25 respectively which were found statistically significant (Table no.3).

Table no.4 Assessment of Retention of Knowledge of students

Intervention	Mean	N	SD	P-value
Post- test 1	15.49	194*	2.98	0.189
Post-test 2	15.25	194*	3.27	

*Students who have participated in both post-tests were considered. Therefore, a little difference is found in mean knowledge score of post-test 1.

There was no significant difference found between knowledge level of post-test 1&2, which tells that students have retained their knowledge even after 15 days.(table no.4)

Table no.5 Assessment of Knowledge score before and after educational programme (post-test 1)

Knowledge category	PRE-TEST	POST TEST 1		
		Adequate knowledge (> 75%)	Moderate knowledge (51 %75%)	Poor knowledge (≤ 50 %)
Adequate knowledge (> 75%)	13 (6.37%)	12 (92.31%)	1 (7.69%)	0 (0%)
Moderate knowledge (51 %75%)	112 (54.90%)	32 (28.57%)	76 (67.86%)	4 (3.57%)
Poor knowledge (≤ 50 %)	79(38.73%)	9(11.39%)	54(68.35%)	16(20.25%)
Total	204(100%)	53(25.98%)	131(64.21%)	20(9.80%)

In pre- test there were only 112(54.90%) students who had moderate knowledge but after intervention 32 (28.57%) student's knowledge improved to adequate category and 76 (67.86%) students remained in moderate category while few students 4 (3.57%) slipped down to the poor knowledge category. Table also shows that students with poor knowledge in pre-test were 79 but after educational programme 54(68.35%) student's knowledge score improved to moderate category and 9 (11.39%) student's showed remarkable improvement in their score and shifted directly to Adequate category from poor category. The number of students with adequate knowledge showed dramatic improvement i.e. it increased from 13(6.37%) to 53(25.98%) after the educational programme. (Table no 5).

Table no. 6Assessment of Knowledge score before and after intervention (post-test 2)

Knowledge category	Pre test	Post-test 2		
		Adequate knowledge (> 75%)	Moderate knowledge (51 %75%)	Poor knowledge (≤ 50 %)
Adequate knowledge (> 75%)	13 (6.70%)	8 (61.54%)	5 (38.46%)	0
Moderate knowledge (51 %75%)	107 (55.15%)	35 (32.71%)	67 (62.62%)	5 (4.6%)
Poor knowledge (≤ 50 %)	74 (38.14%)	9 (12.16%)	42 (56.76%)	23 (31.08%)
Total	194* (100%)	52 (26.80%)	114 (58.76%)	28 (14.43%)

*Only the students who participated in both post- tests were included.

Out of 13(6.70 %) students with adequate knowledge in pre-test, 8 (61.38%) students retained their knowledge adequately in post-test 2. And out of 107(55.15%) students with moderate knowledge in pre-test, 67(62.62%) students retained their knowledge moderately and 35(32.71%) had improved their knowledge to adequate category. Amongst 74 (38.14%) students with poor knowledge in pre-test, 42 (56.76%) students improved their knowledge to moderate category and 9(12.16%) students showed remarkable improvement in their score and shifted directly to Adequate knowledge category from poor category.(Table 6)

DISCUSSION

Incidence of Dengue fever globally increases day by day, Not only is the number of cases increasing but also the disease spreads to new areas and explosive outbreaks are occurring. Recently in Pune there was dengue outbreak (2014). As we know there is no specific treatment for this disease, only prevention is the key to combat with this dangerous disease. Therefore increasing awareness regarding transmission control and treatment of diseases among general public is today's need. In the current study, we found that there is significant improvement in knowledge level after an educational programme regarding dengue and its prevention among high school children. Present study reveals that the mean base line score was found to be 12.11 in pre-test from maximum attainable score of 22 which showed that study participants had good knowledge level which was similar with the study done by Khun S in Cambodia 4and study done by Sultana H et all in Karachi5but study done by Dasgupta A et al in Kolkata3 and study done by Sandeep K.R. Divya et all in Karnataka6 are in contrast which shows that students' knowledge level were poor in pre-test. Our study showed that 13(6.37%) students were with adequate knowledge level and 112(54.90%) were found with moderate knowledge level and 79(38.73%) were with poor knowledge. In contrast to our study's results Kolkata study done by DasguptaAet all3, showed that 90(68.2%) students were with poor knowledge.

Our study mainly focuses on retention of knowledge about dengue and its prevention after educational programme. We have compared the knowledge of post-test 1 and post-test2 for assessing retention of knowledge. Our results showed that students significantly retained their knowledge even after 15 days. No study found where assessment of retention of knowledge level of school children regarding dengue fever and its prevention done.

Retention of knowledge regarding dengue amongst students is important as they can spread this knowledge to community which will be effective in control and prevention of dengue infection in future and this will affect morbidity and mortality occurring during out breaks. **Conclusion**: - Above results showed that there was significant increase in post- test knowledge and retention of knowledge of students after implementation of educational programme. Such type of educational programme should be conducted at regular intervals and despite of dengue, such type of activities can also be used for other communicable diseases to improve awareness at community level.

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