

SHORT ARTICLE

Awareness of dengue fever among school children: a comparison between private and government schoolsShivani Kalra¹, Jasbir Kaur², Suresh Sharma³

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Abstract

Background: Dengue is the mosquito born viral disease spreading its tentacles all over the world. Dengue constitutes for major cause of deaths in children. According to WHO, globally it was estimated that approximately 70-100 million people were infected every year. Therefore, the study has been conducted with the aim to assess knowledge regarding dengue fever among school children. **Methodology:** Total of 500 children were selected from 9th and 10th class of private and government schools using total enumerative sampling technique. Data was collected using questionnaire method. After assessing knowledge classes were taken by investigators focusing on prevention of dengue fever. **Results:** Finding of study revealed that among Private schools excellent knowledge was found in 06 (01.2%) children, good in 123 (24.6%) children, average 112 (22.4%) children and poor in 02 (00.41) whereas in Government schools none of students had excellent knowledge, 76(15.2%) children were having good knowledge, 178(35.6%) children were having average knowledge & 03 (00.6) children were having poor knowledge. The mean knowledge scores were higher in students of Private schools i.e. 31.45 ± 6.41 as compared to students of Government schools i.e. 28.17 ± 5.39 at $t=6.19$ ($p=0.00$). **Conclusion:** It is concluded that majority of school students of private and government schools were having average knowledge regarding prevention of dengue fever. Therefore, there is need for further information, education and communication programs regarding prevention of dengue fever and this can be achieved by organizing health education campaigns in community involving schools.

Key Words

Knowledge; Dengue Fever; School Children

Introduction

Dengue has become a disease to be reckoned with in the last decade with increasing prevalence being reported from different parts of the world, including non-endemic areas. It is increasingly recognized as one of the world's emerging infectious disease [1-2]. It is a communicable and rapidly spreading mosquito borne viral disease [3]. It is caused by dengue virus, a flavivirus in the family of flaviviridae. It is

transmitted by bites of *Aedes aegypti* [4-5]. The mosquito usually breeds in manmade containers [6]. Dengue fever is most commonly seen in rainy season [7]. Infection with dengue virus can produce the clinical manifestations including sudden onset of high fever (103° - 106° F), severe headache, backache, intensive pain in joints and muscles, retro-orbital pain for which it is known as "Break Bone fever" [8]. In recent years, dengue fever has become a global public health concern [9]. About 90% of dengue fever

is seen among school children because school playgrounds and buildings are considered as potential mosquito breeding sites [10]. In India, during 2011, about 18,059 cases were reported with 119 deaths. In Punjab, more than 500 dengue fever cases had been reported out of which 243 cases were reported from Ludhiana district in 2013 [11]. A number of factors have been implicated for this innocuous rise in prevalence such as human population growth, increased travel and inefficient vector control, unplanned urbanization as well as increased movement of people [12]. There is no specific medication or vaccine for its treatment [13]. Therefore, WHO and CDCP recommend community educational campaigns that emphasize on reducing vector breeding sites as an effective way of dengue prevention [14]. Avoiding mosquito bites is the effective way to prevent dengue fever [15] and hence it is important to create awareness in the community regarding prevention of dengue especially in school and colleges.

Aims & Objectives

1. To assess the knowledge regarding dengue fever among school children.
2. To provide health education regarding dengue fever among school children.
3. To develop and disseminate IEC guidelines regarding dengue fever.

Material and Methods

A descriptive research design was used to assess knowledge regarding dengue fever among school children studying in selected schools of city Ludhiana. The study was conducted in selected four schools of city Ludhiana i.e. Kundan Vidya Mandir Senior Secondary School, Civil lines, Ludhiana, Saraswati Modern Senior Secondary School, Civil lines, Ludhiana, Government Senior Secondary Model School, P.A.U, Ludhiana, Shaheed-e-azam Sukhdev Thappar Sarkari Kanya Senior Secondary School, Bharat Nagar, Ludhiana. The target population was students of 9th and 10th class of selected schools. Total of 500 students were selected out of which, 244 were from private schools and 256 were from government schools. Data was collected using questionnaire method consists of a set of 30 questions to assess the knowledge of students regarding dengue fever. Questions were categorized under 5 categories covering all the aspects of dengue fever i.e. Dengue fever, cause and transmission of dengue fever, sign and symptoms of dengue fever,

treatment and diet in dengue fever, prevention of dengue fever. After collecting questionnaire from the students, an hour class was taken by the investigator focusing on prevention of dengue fever and students were also provided with pamphlets which include complete information regarding dengue fever. Data management and analysis was done using statistical software i.e. SPSS (18). ANNOVA and t- tests were applied and significance of effect or differences was established at level of 0.05.

Ethical Consideration: Permission was sought from the college ethical committee and the Principals of selected schools. Anonymity of the subjects and confidentiality of information was maintained. It was ensured that study will not harm the participants in any way.

Results

In the present study, a total of 500 respondents were selected to participate in study consisting of 198 (39.6%) males and 302 (60.4%) females. Most of the children were from age group of 13-15 years i.e. 337 (67.4%). More than half of the children were studying in 10th standard i.e. 278 (55.6%). Out of total 500 children, 256 (51.2%) were studying in government schools and 244 (48.8%) in private schools. As per religion, most of the students belonged to Hindu religion i.e. 358 (71.6%). Majority of students were resident of urban area i.e. 453 (90.6%) and rest are from rural area [\[Table 1\]](#).

It has also been revealed that past history of dengue fever was present in 59 children out of 500. Out of which, 16 (27.1%) subjects had suffered from dengue fever in last 6 months whereas 23 (38.9%) had suffered within last 1-2 years and rest of the subjects i.e. 20 (34%) had suffered from dengue fever more than 2 years ago [\[Figure 1\]](#).

The finding of the study shows that among private schools excellent knowledge was found in 06 (01.2%) children, good in 123 (24.6%) children, average in 112 (22.4%) children and poor in 02 (00.4%) children whereas in government schools none of student was having excellent knowledge, 76 (15.2%) children were having good knowledge, 178 (35.6%) children were having average knowledge and 03 (00.6%) children were having poor knowledge [\[Table 2\]](#).

Mean knowledge scores among students of private schools were found to be higher i.e. 31.45 ± 6.41 as compared to government schools students i.e. 28.17

± 5.39 and the difference was found to be highly significant at $t=6.19$ ($p<0.001$) [Table 3].

The study has also revealed that children whose father's and mother's were graduates and above had higher mean knowledge scores i.e. 31.55 ± 0.34 and 31.56 ± 6.48 respectively as compared to others and the difference was found to be statistically highly significant [Table 4].

Discussion

Dengue is the most important arthropod-borne viral disease of public health significance. The global prevalence of dengue has grown dramatically in recent years with more than 50 million new infections being projected annually [16]. The present study showed that excellent knowledge was found only in 6 (1.2%) students, good knowledge in 199 (39.8%) whereas more than half of students i.e. 290 (58%) had average knowledge and only 5 (1%) had poor knowledge. The findings corroborate finding of the other studies done by Itrat Ahmed *et al* (2008), Ahmed Nahida *et al* (2007), Ibrahim NK *et al* (2006) that none of the student had excellent knowledge, 387(87.95%) had average knowledge and 53 (12.04%) had poor knowledge regarding dengue fever (1, 2, 17) whereas Begonia C Yboa *et al* (2013) found that more than half i.e. 61.45% of respondents had good knowledge, 30.18% had very good knowledge and only 8.37% respondents had average knowledge regarding dengue fever [18].

The present study revealed that mean knowledge score of students studying in private schools was high i.e. 31.45 ± 6.41 as compared to government school students i.e. 28.17 ± 5.39 at $t = 6.19$ ($p = 0.00$). Ibrahim NK *et al*. (2006) found similar findings that the mean knowledge score was high in private schools i.e. 11.73 ± 4.41 (out of 30) as compared to government schools i.e. 10.04 ± 5.01 at $t = 3.06$ ($p < 0.001$) [2].

It was also revealed from the present study that the children whose parent's education level was graduate and above were having higher mean knowledge scores i.e. 31.55 ± 0.34 among father's and 31.56 ± 6.48 among mother's than parents who were illiterate or having elementary and secondary education at $t=12.30$ ($p<0.001$).

Similar findings were reported by Takahashi Risa *et al* (2013) and Khamis Nahla *et al* (2006) concluded that caretakers whose education level was high had more mean knowledge score as compared to those who had low educational level [19, 20].

To spread awareness, classes were taken by the investigator for the students in selected schools including characteristic features of dengue mosquito, mode of transmission, symptoms of dengue fever, potential breeding grounds, treatment and prevention of dengue fever. Pamphlets were also prepared in two regional languages i.e. English and Punjabi covering all the aspects regarding dengue fever and distributed among school children and teachers.

Conclusion

It was concluded that more than half of the school children had average knowledge regarding dengue fever and mean knowledge scores of private schools children were higher as compared to government school children. The students with parent's educational level graduate and above were having higher knowledge regarding dengue fever than parents who were illiterate or having elementary and secondary education. In the absence of an effective vaccine for dengue fever, the prevention and control of the disease mainly depends upon the epidemiological surveillance and implementation of effective vector control measures. Therefore, there is a further need to provide information, education and communication programs which can be achieved by organizing health education campaigns in community involving schools and other educational platforms.

Authors Contribution

SK: Concept and design, data collection, manuscript writing; JK: literature search, data collection, manuscript writing; SS: statistical analysis, manuscript writing.

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Tables

TABLE 1 PERSONAL PROFILE OF SCHOOL CHILDREN

	N=500
Personal profile	f (%)
Age (in years)	337 (67.4)
13-15	163 (32.6)
16-18	
Gender	
Male	198 (39.6)
Female	302 (60.4)
Class	
9thstandard	222 (44.4)
10th standard	278 (55.6)
Type of school	
Private	244 (48.8)
Government	256 (51.2)
Religion	
Hindu	358 (71.6)
Sikh	142 (28.4)
Habitat	
Urban	453 (90.6)
Rural	47 (09.4)

TABLE 2 COMPARISON OF KNOWLEDGE SCORES RELATED TO DENGUE FEVER AMONG CHILDREN STUDYING IN PRIVATE AND GOVERNMENT SCHOOLS (N=500)

Level of knowledge	Criteria	Private f (%)	Government f (%)
Excellent	46-60	06(01.2)	0 (00.0)
Good	31-45	123(24.6)	76(15.2)
Average	16-30	112(22.4)	178(35.6)
Poor	0-15	02(00.4)	03(00.6)

TABLE 3 MEAN KNOWLEDGE SCORES REGARDING DENGUE FEVER AMONG SCHOOL CHILDREN STUDYING IN PRIVATE AND GOVERNMENT SCHOOLS (N=500)

Type of school	Knowledge scores		Interquartile range	t-test
	Mean \pm SD	Median		
Government	28.17 \pm 5.39	28.0	28	t=6.19 p=0.00**
Private	31.45 \pm 6.41	32.0	40	

**Highly significant

TABLE 4 ASSOCIATION OF MEAN KNOWLEDGE SCORE OF DENGUE FEVER WITH EDUCATIONAL AND OCCUPATIONAL PROFILE OF PARENTS (N=500)

Variables	Knowledge score Mean \pm SD	ANOVA value	p value
Father's education		12.30	0.00
Illiterate	27.04 \pm 5.32		
Elementary	28.12 \pm 5.87		
Secondary	29.16 \pm 5.54		
Graduate and above	31.55 \pm 0.34		
Mother's education		12.65	0.00
Illiterate	26.88 \pm 4.97		
Elementary	28.61 \pm 5.90		
Secondary	29.48 \pm 5.55		
Graduate and above	31.56 \pm 6.48		

Figures

FIGURE 1 PAST HISTORY OF DENGUE FEVER AMONG CHILDREN IN PERCENTAGE (N = 59)