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# A study to evaluate the effectiveness of child to child approach on knowledge regarding dengue fever among school going children at Avadi

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**Abstract**
**Objective:** To evaluate the effectiveness of child to child approach on knowledge regarding dengue fever among school going children in experimental group in a rural area of avadi.
**Method:** A Experimental study was conducted among 100 students, 50 each in experimental group and control group who met the inclusive criteria convenient sampling technique was used for selecting the sample. Data collection was done using an self-administered knowledge questionnaire.
**Results:** Among 100 samples the present study reveals that 38% of students have adequate knowledge in the experimental group where in control group 10% adequate knowledge regarding dengue fever.
**Conclusion:** Lack of awareness and unhealthy practices create a serious public health threat among school children.

**Keywords:** child to child approach, dengue fever

## Introduction

Children are the country's biggest human investment for development. It is rather unfortunate that even after 60 years of independence our country has made little progress in improving the health condition of our school going children when compared to the developed countries [2].

United Nation International children's fund quoted that children are not only divine gifts, but also the mirror and hope of world. Health of the school going children is a key factor in school entry as well as continued participation and attainment in school. Among one of the leading priorities the worldwide is its commitment to ensure that every individual completes a quality primary–school education [3].

Dr. Sunder, K.R. (2015) explained that school children are an important group because they often form a high proportion. The child spends most of the time in the school between the ages 6 and 15 years. School must be seen as a powerful channel for reaching out the public health information. It gives an opportunity to prepare themselves [2]

## World Health Organization

Stated that an effective school health program can be one of the most cost-effective investments a nation can make to simultaneously improve education and health and also promote school health programs as a strategic means to prevent important health risk among children and to engage the educational, social, economic, and political conditions that affect risk.

Damodaran, S. (2015) stated that children are considered as health ambassadors for water and sanitation promotion at the individual household level. School environment plays a pivotal role in the retention and learning outcomes of students. Children act as a "message carriers" to others [2]

Park, K (2014) [8] stated that dengue is a mosquito- borne flu virus disease that has spread to most tropical and many sub-tropical areas, by one of the four types of dengue viruses Aedesaegypti mosquito is the primary vector of dengue.

The incubation period is from 3 to 14 days. Infected humans are the main carriers and multipliers of the virus serving as a source of the virus of the infected mosquito's patients who are already infected with the dengue virus can transmit this infection for 4-5 days via Aedes mosquitos after their first symptoms appear.

Aedes aseptic is a day time feeder, its peak biting periods are early in the morning and in the evening before dusk. FemaleAedesaegypti bites multiple people during each feeding period. The large dengue's out breaks in recent decades were seen especially after heavy rains. High densities occur during July-November due to the availability of breeding habitats.

The mosquito breeds mostly in manmade containers like earthenware jars, metal drums, concrete cisterns used for domestic water storage, discarded plastic food containers, used automobile Tyres, coconut shells and other items that collects rainwater [8].

Ghai, O.P.(2014) [7] stated dengue should be suspected when a high fever (40 degree celsius/ 104 degree fahrenheit) is accompanied by two of the following symptoms like severe headache, pain behind the eyes, muscle and joint pains, nausea, vomiting, swollen glands or rash. Symptoms usually last for 2-3 days after an incubation period of 4-10 days after the bite from an infected mosquito. The acute phase of illness can last for 1 week followed by 1 to 2 weeks period of recovery that is characterized by weakness, malaise, loss of appetite [7].

Dengue Shock Syndrome is usually found after 2 to 7 days of fever. The patient present with cold congested blotchy skin, rapid and weak pulse. lethargy, restlessness may occur before onset of shock. Hypotension, reduced pulse pressures are found. Good prognosis is indicated by good and adequate appetite urine output.

Severe dengue is potentially deadly with complication due

to plasma leaking, fluid accumulation, respiratory distress, severe bleeding or organ impairment warning signs occurs with a decrease in temperature (below 104 degree Fahrenheit) severe abdominal pain persistent vomiting, rapid breathing, bleeding gums, fatigue restlessness and blood in vomit, the next 24-48 hours of the critical stage can be lethal, proper medical care is needed to avoid complications and risk of death.

The Diagnosis of dengue fever is confirmed by serum sample collected from person within 5 days after appearance of symptoms. The serum is tested for specific anti-dengue anti-bodies by ELISA, antibody titers of IgM and IgG and polymerase chain reaction detection and decreased platelet count.

There is no specific treatment for dengue fever. Symptomatic treatment should be done. The patient needs hospitalization for proper treatment in order to reduce mortality rate. Supportive treatment like intravenous fluid replacement and anti – biotic therapy is required. Patients are asked to drink plenty of water and juices in order to prevent dehydration. Monitoring of vital signs, intake and output chart that are essential. Salicylates should be avoided because it may precipitate bleeding tendency and metabolic acidosis

Researchers found that the juice obtained from the papaya leaves helps in the dengue fever treatment. The extract from that leaves increases the platelet count in patients with dengue. The Indian medicine such as papaya juice extract. Nilavembu and MalivembuKudineer along with conventional medicine are used for the control of dengue. Daily surveillance is carried out and the disease is now under control.

Dengue is one of the major public health problems which can be controlled with active participation of the community. There is need to organize health education program about dengue disease to increase community knowledge and sensitize the community to participate in integrated vector control program [6].

Park, K. (2014) [8] stated that health education in schools is one of the functions of public health of public health nurse or health worker. If children are educated, they will take the information to their parents and when they become adults they would apply this knowledge to their own families to improve the health status [8].

Child to child approach was launched in 1978 during the international year of children. Teaching materials were prepared covering developmental needs, nutrition, illnesses and aspects of the environment. Child to child program enhances the quality of primary school education by promoting creativity in children. It enhances to improve the health conditions in the schools by strengthen school health education curriculum [2].

Child to child approach helps to improve knowledge of families and communities which lead to bring out changes in practice it also improve the environment and community conditions.

Child to child approach take command of their own learning and children determine the direction of their own learning following their natural curiosities, interests and passions.

Child to child approach is a time when children are planning, testing, questioning, and experimenting to construct their own knowledge about people, objects, events and ideas [3, 4].

Globally climate change is getting in unusual rainfall pattern leading to surplus rains in some locations, deficient rains elsewhere and untimely burst of rainfall. Studies indicate that the South Indian states are facing perceptible fluctuations in climatic conditions, and possibly the health of people is directly or indirectly affected because of these fluctuations 1:2. Risein average temperature, an element of climate change, favors higher breeding and spread of the vectors such as AedesAegypti, and consequently spread of dengue virus. In general, incidences of dengue fever, a mosquito- borne tropical disease (flavivirus, an rna virus of the family flaviviridae) are increasing fast resulting in higher morbidity and mortality in human worldwide, particulary in tropical and subtropical countries.

The first record of a case of dengue in Chinese encyclopedia from the jinn dynasty which is referred to a water poison associated with flying Insects.

In India the risk of dengue has shown an increase in recent years due to urbanization, lifestyle changes and deficient water management including improper water storage practices in urban, peri- urban and rural areas leading to proliferation of mosquito breeding sites. it is a recurrent problem in West Bengal were dengue was first documented in 1824 and dengue hemorrhagic fever was first reported in Kolkata in 1963-64 and increased in large number of scale.

Due to scarcity of water, the people in peri urban store for washing /drinking purposes in plastic drums, concrete tank. The water storage containers are rarely washed and they form ideal breading site for Aedes mosquitos 74% of people stored water for longer periods without a proper lid in the peri urban areas. Health awareness program need to be conducted in these areas especially among women who are more responsible for household activities especially with respect to cleanliness of the house.

Child to child approach is an application with in the field of child development that allows the child to make their own choices and establish their own ideas towards promoting competent communication and learning. Child to child approach to health education is innovative simple cost-effective participatory approach that makes use of potentials of children to maximize the spread of health message. It is an active method.

This child education program Improve the knowledge and skills in content areas such as creative representation, language and literacy, initiative and social relations.

**Objectives**

To evaluate the effectiveness of child to child approach on knowledge regarding dengue fever among school going children in experimental group in a rural area at avadi.

**Method**

A Experimental study was conducted among 100 students, 50 each in experimental group and control group who met the inclusive criteria convenient sampling technique was used for selecting the sample. Data collection was done using a self-administered knowledge questionnaire. A Sample of 100 school going children which includes 50 experimental groups and 50 control group. Samples are selected by convenience sampling techniques.

The descriptive study was conducted during a one week period. Data collection was conducted during in government higher secondary school Avadi, after getting permission from the head minister of the school. demographic variables consist of age, sex, educational status of the parents,

occupation of the father, family income, religion, resident area, source of drinking water, Family members affected with dengue, previous source of information about dengue fever carry method and time spend to arrive the school.

Self-administered questionnaire used to assess the knowledge regarding dengue fever of the school going children as well as the child to child approach was conducted. The study investigators explained to the students about the study's objectives, rational and requirement of consent to participate in the study. The investigators then provided instructions for filling the questionnaire, and then guided the students understanding of each question was checked by asking the students to repeat the meaning. During the filling the questionnaires, the investigators helped the students throughout and helped simplifying the meaning of each question, clarifying doubts and checking for completeness of filling up the questionnaire, after the questionnaires were collected.

Chi-square test was used to test the association between categorical variables. P<0.01 was taken as statistically significant.

## Results

### Secton A

### Frequency and percentage distribution of samples according to their demographic variables

In that Majority of the students 37 (74%) in experimental group belong to age of 12 years, male 26(52%) in experimental group, educational of the parents, higher secondary 29 (58%), in experimental group and 23 (46%) in control group were coolie workers, 28(56%) in control group were having family income between rs. 50000-10000. The students 48 (96%) in experimental group were live in rural and urban areas. The houses 35(70%) in control group were using corporation water. Majority of the students 50 (100%) in experimental group had no history of dengue fever in their family

**Table 1:** This section deals with the comparison of mean scores between pretest and posttest among control group and experimental group

| Group | Pretest Mean SD | Posttest Mean SD | paired 't' test |
|---|---|---|---|
| experimental group | 18.11 15.22 | 21.46 21.70 | 13.346 |
| control group | 10.97 4.183 | 13.36 4.020 | 2.971 |

The comparison of mean scores between pretest and posttest in knowledge experimental group the mean posttest knowledge 21.46 was higher than the pretest mean 18.11 with the standard deviation of 21.70 and obtained 't' value (13.346) was significant at p<0.01.

The comparison of mean scores between pretest and posttest in knowledge control group the mean posttest knowledge 13.36 was higher than the pretest mean 10.97 with the standard deviation of 4.020 and obtained 't' value (2.971) was significant at p<0.01.

**Table 2:** This section deals with the comparison of mean scores between posttest knowledge in control and experimental group.

| Group | Sample (N) | Posttest Mean | Posttest SD |
|---|---|---|---|
| Control Group | 50 | 13.36 | 4.020 |
| Experimental Group | 50 | 21.46 | 21.70 |

Comparison of mean posttest knowledge in control and experimental group.the control group was higher than the experimental group which implies that there was a significant increase at p<0.01 level.

**Table 3:** This section deals with association between selected demographic variables with pretest level of knowledge in control and experimental group

| Demographic Variables | Control Group (N=50) | | | Experimental Group (N=50) | | | |
|---|---|---|---|---|---|---|---|
| | Adequate | Moderately Adequate | Inadequate | Adequate | Moderately Adequate | Inadequate | Chi-Square |
| 1.Occupation | | | | | | | |
| a. Government | 0 | 0 | 2 | 10 | 2 | 4 | $\chi^2$ =14.002 Df=6 **S*** |
| b. Private | 0 | 1 | 1 | 30 | 10 | 2 | |
| c. Coolie | 2 | 8 | 15 | 6 | 18 | 8 | |
| d. Self Employed | 0 | 0 | 1 | 4 | 2 | 2 | |
| 2.Family Income | | | | | | | |
| a. 5000-10000 | 1 | 7 | 15 | 0 | 16 | 12 | $\chi^2$ =32.555 Df=4 **S*** |
| b. 10000-15000 | 1 | 2 | 4 | 38 | 4 | 2 | |
| c. 15000 And Above | 0 | 0 | 0 | 12 | 16 | 0 | |
| 3.Source Of Information About Dengue | | | | | | | |
| a. Health Professional | 1 | 0 | 2 | 16 | 14 | 10 | $\chi^2$ =23.331 Df=6 **S*** |
| b. T.V, Radio | 0 | 4 | 4 | 32 | 4 | 0 | |
| c. Friends | 0 | 0 | 1 | 0 | 12 | 2 | |
| d. Do Not Know | 1 | 5 | 12 | 2 | 6 | 2 | |

The association between demographic variables with pretest knowledge score.

The calculated chi square values imply that there was no association between demographic variables with pretest level of knowledge in control group and there was a significant association between selected demographic variables such as occupation of the parents, income of the parents, and source of information with the pretest level knowledge in experimental group

## Discussion

The study was conducted in a prototype economically deprived rural area of avadi. The result of this study showed that in control group 16(32%) of the children had inadequate Knowledge, 15(30%) had moderately adequate knowledge and 19 (10%) had adequate knowledge. in experimental group 26(52%) had inadequate knowledge, 7 (14%) had moderately adequate knowledge and 17(38%) had adequate knowledge. the result of this study shows that the children

had lack of knowledge and they were not aware of the consequences of dengue fever as the family members were not affected child to child approach to insist the importance regarding dengue fever in various aspects such as causes, mode of transmission, breeding places, types, nature of mosquito, clinical manifestations, complications, control and prevention of mosquito bite [1, 8].

In this present study, the mean posttest knowledge 21.46 regarding dengue fever was significantly higher than the mean pretest knowledge 18.11 and school children who received child to child approach and the calculated 't' value was higher than the table value at $p<0.01$ level. The reason for the result was during the period of child to child Approach, children were keenly interested and they asked questions and clarified their doubts. Interaction was very good. It was useful for the children handle it in their day to day life. After a child to child approach there was a significant increase in knowledge in the future [11, 14].

The mean post-test knowledge 21.46 regarding dengue fever was significantly higher in experimental group of school children who received child to child approach than the control group mean post-test knowledge. The calculated t value was significantly higher than the table value at p <0.01 level. The investigator concluded that the child to child approach was effective in improving the knowledge of school children regarding dengue fever among experimental group [12].

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The present study result depicts that out of 100 samples in experimental group 26(52%) had inadequate knowledge, 7(14%) had moderately adequate knowledge and 17(34%) had adequate knowledge regarding dengue fever. The present study is supported by M. AnithaCatherine (2016) the result of the study are 3(10%) had adequate knowledge, 16(53.3%) had inadequate knowledge.

The findings are important to educate school children regarding dengue fever in child to child approach group.

## Conclusions

Lack of awareness and unhealthy practices create a serious public health threat to school children. School health is important intervention as a great deal of research tells us that schools can have a major effect on children's health by teaching them about health and promoting healthy Behaviors. Promotion of healthy practices in schools by health service through innovative method of teaching such as play way method, child to child method, and kinder garden learning could be an effective means of communication regarding health issues among children.

Imparting the concepts of child to child approach to nursing students and its utilization to give health education in the Schools, Hospitals, and community could be used for disseminating the health messages among children. Therefore, awareness regarding the disease prevention and promotion of health through healthy practice can be promoted today and for the future generations.

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