

Research Article

A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME ON KNOWLEDGE REGARDING WATER SANITATION AND HAND HYGIENE ON PREVENTION OF DIARRHOEA AMONG CHILDREN IN SELECTED HIGHER PRIMARY SCHOOL AT TUMKUR

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ABSTRACT

Diarrhoea is one of the leading causes of illness and death, particularly in children under five, and is often linked to poor water sanitation and hand hygiene practices. According to the World Health Organization improving access to clean water, proper sanitation, and hand hygiene can significantly reduce diarrhoea-related diseases. This study aimed **objectives:** 1. To assess the pre-test knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school. 2. To evaluate the effectiveness of video assisted teaching programmed on knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school. 3. To find-out the association between the pre-test knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school with selected demographic variables. **Methodology:** The research design of the study was pre-experimental one group pre-test post-test design. The population was children studying in higher primary school at Tumkur, a quantitative approach research design was used. The sample consists of 60 children studying in higher primary school at Tumkur. Convenient sampling technique was used for the study. The knowledge was assessed using structured knowledge questionnaires. The data obtained was analysed by using descriptive and inferential statistics. **Results:** The study findings revealed that the knowledge of children was determined with the mean knowledge score was 13.63 with a standard deviation of 4.333, representing a mean percentage of 42.59%. Among the 60 participants, 70% had inadequate knowledge and 30% had moderate knowledge in the pre-test. After administration of video assisted teaching programme in post-test, the mean knowledge score increased to 21.93, with a standard deviation of 3.795, and the mean percentage of 68.53%.

Keywords: Assess; higher primary school children; water sanitation and hand hygiene;

INTRODUCTION

Diarrhoea is the passage of three or more loose or liquid stools per day, or more frequently than is normal for the individual. It is usually a symptom of gastrointestinal infection, which can be caused by bacterial, viral and parasitic organisms. Infection is spread through contaminated food or drinking water, or person to person as a result of poor hygiene. Diarrhoea can last several days and can leave the body without the water and salts that are necessary for survival. Children who are malnourished or having impaired immunity are most at risk of life-threatening diarrhoea.^{[1][2]}

Rotavirus and Escherichia coli are the 2 most common causes of diarrhoea in developing countries which are commonly spread by faeces-contaminated water, from sewage, septic tanks and latrines due to unhygienic conditions. Infection is more common when there is a shortage of clean water for drinking, cooking and cleaning.

Every year there are about 2 billion cases of diarrheal disease worldwide. Diarrheal disease is a leading cause of child mortality and morbidity in the world, and most results from contaminated food and water sources worldwide, around 1 billion people lack access to improved water and 2.5 billion have no access to basic sanitation.^[3]

In developing countries, children under 3 years old experience an average episode of diarrhoea every year. Each episode deprives the child of the nutrition necessary for growth. As a result, diarrhoea is a major cause of malnutrition, and malnourish children are more likely to fall ill from diarrhoea.^[2]

Diarrhoea is highly communicable disease; there is need to control and prevent diarrhoea. Hence water sanitation and hand hygiene intervention can be carried out. The purposes of providing access to hygiene services include achieving public health gains, to improving human dignity in the case of sanitation, implementing the human right to water and sanitation, reducing the burden of collecting drinking water for women, reducing risk of violence against women, and reducing water pollution.^[4]

Since there is loss of water in case of diarrhoea, which is leading to poor water retention in body so providing safe clean filtered water can reduce the risk of dehydration. Unhygienic environments like use of dirty latrines, open defecation will encourage the growth and spread of microbes that can cause diarrhoea so it is very necessary to construct and use clean safe sanitized toilets. Since a higher primary student doesn't have enough knowledge, they are prone to undergo improper hygiene practices and food habits that can make child sick so educating mother regarding hygiene can reduce the risk.

In worldwide Almost 60 per cent of deaths due to diarrhoea are attributed to unsafe drinking water and poor hygiene and sanitation. Hand washing with soap alone can cut the risk of diarrhoea by at least 40 per cent and significantly lower the risk of respiratory infections.

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Clean home environments and good hygiene are important for preventing the spread of both pneumonia and diarrhoea, and safe drinking water and proper disposal of human waste, including child faeces, are vital to stopping the spread of diarrheal disease among children and adults.^[5]

Water sanitation and hand hygiene interventions are classified into groups and subgroups of related interventions (Fewtrell and Colford, 2004):

- Hygiene interventions: Including hygiene and health education and the encouragement of specific behaviours, such as hand-washing.
- Sanitation interventions: providing improved means of excreta disposal, usually latrines.
- Water supply interventions: Including provision of an improved water supply and/or distribution, such as the installation of a hand pump or household connection, either at the public or household level.
- Water quality interventions: Water treatment for the removal of microbial contaminants and/or clean storage, either at the source or at the household level.
- Multiple interventions: Those which introduced a combination of water and sanitation and/or hygiene elements to the study population.^[4]

As diarrhoea is fatal disease to children's following water sanitation and hand hygiene interventions in preventing diarrhoea is very important to decrease child mortality and morbidity rate.

NEED FOR THE STUDY

Globally in 2023, children from the poorest 20 per cent of households in their respective countries – those often at greatest risk of diarrhoea – were less likely to receive ORS for the treatment of diarrhoea than children from the richest quintile (36 per cent versus 45 per cent). However, even among the richest quintile, only half of children suffering from diarrhoea are treated with ORS.

A report by WHO in 2019 found that the water sanitation and hand hygiene-attributable disease burden amounts to 3.3% of global deaths, 4.6% of global disability-adjusted life years. Among children under 5 years, water sanitation and hand hygiene attributable deaths represent 13% of deaths, 12% of disability-adjusted life years. Worldwide, 1.9 million deaths have been prevented in 2016 with adequate water sanitation and hand hygiene.^[4]

According to UNICEF approximately 9 per cent of all deaths among children under age 5 worldwide in 2021. This translates to over 1,200 young children dying each day, or about 444,000 children a year, despite the availability of a simple treatment solution.

According to the global health estimate report, diarrhoea was the top cause of death among children aged between 1 and 4 years in 2015 (48.4 deaths per 100,000 live births) and in 2019 (37.8 deaths per 100,000 live births) (Global Health Estimates 2020). In low- and middle-income countries, diarrhoea is attributed to 54–65% of all deaths due to the inadequate access of safe drinking water 35%, poor sanitation 31% and poor hygiene 12%, which result in 829,000 deaths annually (WHO 2019).

As per data provided by Times of India, on June 14th, in Madhugiri village in Tumkur district, the death of six people, including a 13-year-old girl, and the hospitalization of over 100 people after consuming contaminated water during a weeklong temple fair. Several attendees started experiencing acute diarrhoea on June 10, a day after the fair started and were admitted to the Madhugiri Taluk Hospital and

Tumkur District Hospital. Three senior citizens succumbed to their symptoms in the following days. The 13-year-old girl and two other senior citizens died at a private hospital in Madhugiri town on June 12th.

The lack of knowledge regarding water sanitation and hand hygiene could be a contributing factor towards childhood diarrhoea. Being a citizen of India and with my very own personal experience of providing health care facility for children with diarrhoea has led to my notice that greater portion of the population has less knowledge regarding water sanitation and hand hygiene intervention. So, as a researcher I thought of taking the opportunity to help higher primary school children to develop and refine their existing skills and knowledge by using video assisted teaching method in order to reduce the further incidence of diarrhoea

OBJECTIVES

1. To assess the pre-test knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school.
2. To evaluate the effectiveness of video assisted teaching programmed on knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school.
3. To find-out the association between the pre-test knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school with selected demographic variables.

HYPOTHESIS

- **H1:** There will be a significant difference between a pre-test & post-test knowledge score of video-assisted teaching program on knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school.
- **H2:** There will be a significant association between a pretest knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school with selected sociodemographic variables.

METHODOLOGY

The research design of the study was pre-experimental one group pre-test post-test design. The population was children studying in higher primary school at Tumkur, a quantitative approach research design was used. The sample consists of 60 children studying in higher primary school at Tumkur. Convenient sampling technique was used for the study. The knowledge was assessed using structured knowledge questionnaires. The data obtained was analysed by using descriptive and inferential statistic

RESULTS

The study findings revealed that the knowledge of children was determined with the mean knowledge score was 13.63 with a standard deviation of 4.333, representing a mean percentage of 42.59%. Among the 60 participants, 70% had inadequate knowledge and 30% had moderate knowledge in the pre-test. After administration of video assisted teaching programme in post-test, the mean knowledge score increased to 21.93, with a standard deviation of 3.795, and the mean percentage of 68.53%. In the post-test, 36.7% of students had adequate knowledge, 63.3% had moderate

knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea in post-test. These results strongly indicate that the video assisted teaching programme was effective in improving knowledge related to water sanitation and hand hygiene on prevention of diarrhoea. Hence, hypothesis H_1 , which stated that there is a significant difference in the pre-test and post-test knowledge scores of children regarding water sanitation and hand hygiene on prevention of diarrhoea is accepted. The chi-square (χ^2) test was conducted to examine the association between pre-test knowledge levels and selected demographic variables. The result shows that gender and monthly family income were significant at 0.05 level. Thus, the hypothesis H_2 which stated that there is significant association between knowledge level of the Children and selected sociodemographic variables. Hence the hypothesis stated there will be significant association between knowledge of Children and selected demographic variables is accepted.

TABLE1: KNOWLEDGE LEVEL OF CHILDREN

N = 60

Knowledge level	Pretest		Post-test	
	Frequency	%	Frequency	%
a. Inadequate knowledge	42	70.0	0	0.0
b. Moderate knowledge	18	30.0	38	63.3
c. Adequate knowledge	0	0.0	22	36.7
Total	60	100	60	100

TABLE 2: THE KNOWLEDGE LEVEL OF CHILDREN STUDYING IN SELECTED HIGHER PRIMARY SCHOOL REGARDING WATER SANITATION AND HAND HYGIENE ON PREVENTION OF DIARRHOEA

N = 60

Knowledge aspects	Pre test		Post test		Mean difference	t value	df	Inference
	Mean	SD	Mean	SD				
Water Sanitation	7.33	2.305	11.68	2.34	4.350	16.513	59	S
Hand Hygiene	6.3	2.287	10.25	2.207	3.950	17.476	59	S
Overall	13.63	4.333	21.93	3.795	8.300	24.430	59	S

Table 2 it is evident that the obtained "t" value 24.430 is greater than the table value both at 0.05 level of significance. Therefore, "t" value is found to be highly significant. Hence it is inferred that there is significant difference between the knowledge of Children studying in selected higher primary school regarding water sanitation and hand hygiene on prevention of diarrhea

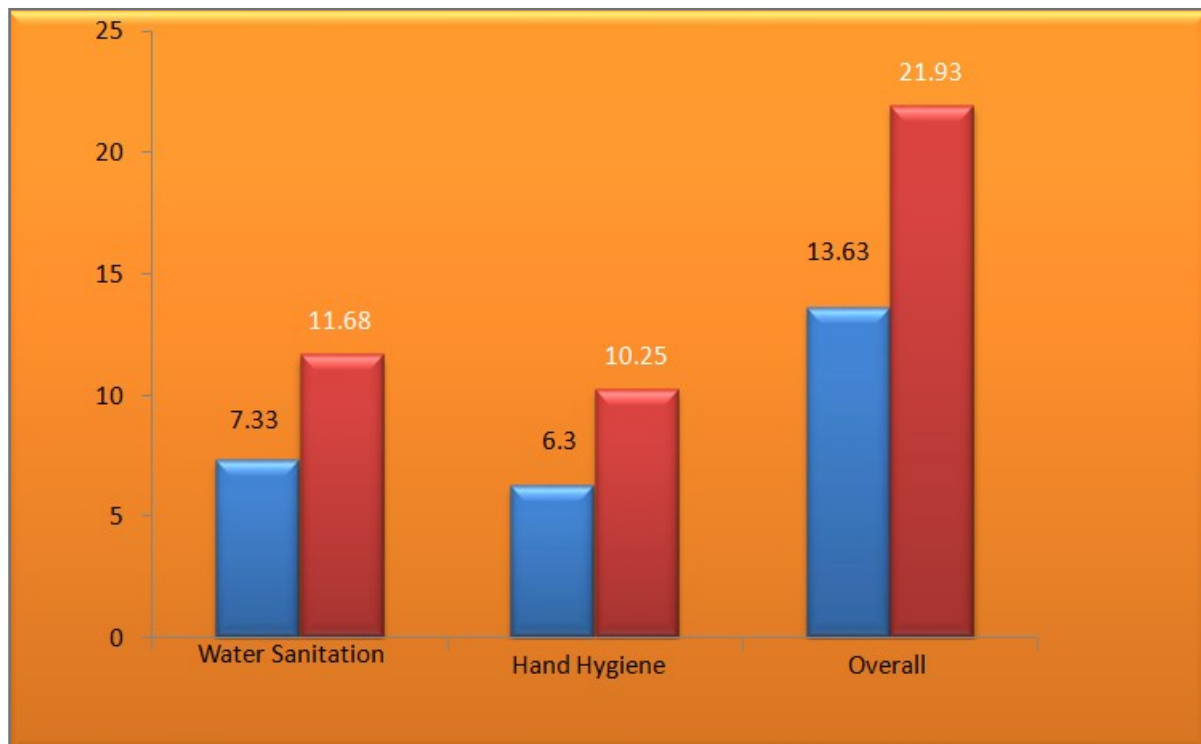


Figure 1: Comparison of mean percentage of pre-test and post-test score

DISCUSSION

The findings of the study have been discussed with reference to the objective and hypothesis,

- **To assess the pre-test knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school.**

The finding of the study revealed that overall knowledge score was mean 13.63 (42.59%) and standard deviation 4.333 and mean percentage was 42.59%. 42 subjects had (70%) inadequate and 18 subjects had (30%) moderate and 0 subjects had (0%) adequate knowledge. This score shows that the among children of selected higher primary school aged between 11-14 years living in Tumkur was significantly inadequate knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea.

- **To evaluate the effectiveness of video assisted teaching programmed on knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school.**

The finding of the study revealed that overall knowledge score was mean 21.93 and standard deviation 3.795 and mean percentage was 68.53%. 22 students had (36.7%) adequate and 38 students had (63.3%) moderate knowledge and 0 students had (0%) inadequate knowledge. This score shows that the knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among selected higher primary school children was significantly adequate. After administration of video assisted teaching programme, findings of the study show the improvement of the knowledge scores.

- **To find-out the association between the pre-test knowledge regarding water sanitation and hand hygiene on prevention of diarrhoea among children in selected higher primary school with selected sociodemographic variables**

The results of the study show χ^2 value computed between the pretest knowledge levels of higher primary school children on water sanitation and hand hygiene on prevention of diarrhoea and selected demographic variables. Variables such as gender and monthly family income were significant at 0.05 levels. Thus, it can be inferred that there is a significant association between knowledge level of the children and selected variables. Therefore, the hypothesis H_2 stated there will be significant association between knowledge of Children and selected sociodemographic variables is accepted.

CONCLUSION

The pre-test had shown that the knowledge of higher primary school children regarding water sanitation and hand hygiene on prevention of diarrhoea was inadequate and moderately adequate. After the administration of video assisted teaching programme, the post-test level of higher primary school children regarding water sanitation and hand hygiene on prevention of diarrhoea had shown an adequate increase in knowledge. The video assisted teaching programme used in this study was found to be an effective method in improving the knowledge of higher primary school children participated in this study

RECOMMENDATION

On the basis of finding of the study the following recommendations were made,

- The replication of present study can be conducted with a large-scale sample to validate and for better generalization of the findings.
- A similar study can be replicated with a randomization in selecting the participants.
- A similar study can be conducted to increase community access to safe water sources and improved sanitation facilities
- A similar study can be conducted to promote the use of low-cost household treatment and safe water storage techniques.
- A similar study can be conducted to encourage local health workers and schoolteachers to serve as hygiene champions.

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