

Original Research Article

Impact of educational intervention in promoting knowledge attitude and practice for prevention of common childhood diseases among 9-11 year old school children in rural Bangalore

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ABSTRACT

Background: Children are the most vulnerable and easily influence able part of society and thus when subjected to health education the knowledge they gain and the practices they develop are more likely to stay with them throughout their life hence the study was done to assess the impact of health education among school students.

Methods: Educational intervention study was carried out in three primary schools in Hoskote, rural Bangalore among 9-11 years school children. Initial survey was done to assess the KAP levels in 9 to 11 years old school children regarding prevention of common childhood disease and intervention was done using an interactive story board to provide health education and impact of intervention was assessed.

Results: The study comprised of 200 students (112 boys and 88 girls). It was found that overall general knowledge and attitude regarding prevention of common childhood diseases was poor among the study participants. Following educational sessions using interactive story board (edutainment) a significant improvement was observed in knowledge and attitude of the students as detected by improved correct response rates.

Conclusions: Interactive story board was successful in providing educational intervention in 9 to 11 year old school children which may help to prevent common avoidable childhood diseases.

Keywords: School students, Health education, Edutainment, Interactive story board

INTRODUCTION

The World Health Organization (WHO) defined health in its broader sense in its 1948 constitution as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."¹ Health forms the very structural basis of well being.

Poor health of an individual is not only a burden of self for the individual, but also a burden for his/her family

and thus the society at large. Children are one of the most vulnerable and high risk groups for health based problems.² Awareness through promotion of health education enables children with the necessary knowledge tools and practices to take precaution against various common avoidable diseases which mainly spread through improper practices of personal hygiene and personal health care. This in turn enables them to become healthier and more productive members of society.

W.H.O defines health education as “Health education is any combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes.”³ Health education aims at helping individuals to improve their knowledge and use of edutainment for health education is a combination of education and entertainment.^{4,5} It aims at integrating lessons of educational value and familiar forms of entertainment and has proven to be more effective in increasing knowledge and recollection and thus also has helped in increasing understanding of a particular topic and in integrating the knowledge learned in appropriate day to day situations and practices in their lives.

Edutainment has been successful in addressing and promoting various social and health issues such as road safety, nutrition and child’s diet.^{6,7}

Children actively build knowledge through life experiences when they play or participate in games. Various studies have shown that edutainment tools such as card games etc. have been effective in increasing knowledge levels, attitude and behaviour of children.⁸⁻¹⁰

In India very few studies have been done regarding the effectiveness of the edutainment programs and not many studies have been conducted to assess the impact of health education to improve awareness in school children in preventing common childhood diseases hence the present study was carried out to assess impact of health education among school children.

Objective

- To assess the level of awareness, attitude and practice regarding prevention of common childhood diseases among 9-11 year school children.
- To improve their KAP regarding the same through health education (Interactive Story Board Game).
- To assess the impact of health education.

METHODS

Study design

Educational interventional study.

Study duration

Two months - August 2016 to September 2016

Study participants/source of data

The study was carried out in three primary schools in Hoskote, rural Bangalore. Students aged between 9-11 years (both boys and girls) who were present at the time of study were the study participants. A total of 200 students (112 boys and 88 girls) participated in the study.

Study process

Study was done in the following phases:

Phase 1: Semi structured, self administered questionnaire was developed in English language to assess the baseline knowledge, attitude and practices of 9-11 years children. Questionnaire contained simple questions to assess knowledge, attitude and practices for the prevention of common childhood diseases like malnutrition, upper respiratory tract infections, diarrhoea, oral hygiene, first aid to injuries, etc. Interactive story board was developed for educating the students regarding prevention of common childhood diseases. The interactive story board was made from a plastic polymer and it had 4 panels. Each panel had a red bulb and a green light bulb fitted inside. The questions on the questionnaire were represented in a cartoon format and slid into the panels. When the student picked an option, depending on whether it was right or wrong, the appropriate bulb lit up. Red bulb lit up in case of the wrong option and green bulb lit up in case of the right option.

Ethical clearance was obtained from the Institutional Ethical Committee. Permission from the School Principal was taken before the study by informing them about the benefits and risks involved in the study. Participation by the students was voluntary and the participant’s names and personal details were not recorded.

Phase 2: Questionnaire and Interactive story board developed was pilot tested for its content and age appropriateness. The necessary changes were made to the questionnaire and the story board.

Phase 3: The process of data collection was done in the following manner.

- *Pre intervention survey:* A baseline survey was conducted to assess the knowledge, attitude and practices of study participants towards prevention of common childhood diseases using the pretested questionnaire.
- *Intervention:* Health education was given to the school children using interactive story board game. Students were divided into groups containing not more than 30 students per session of health education for better effectiveness.
- Post intervention survey was conducted to assess the improvement in the knowledge and attitude of children using the same questionnaire.

Phase 4: The data was analyzed using Statistical Package for Social Sciences.

Statistical analysis

Data was entered into Computer using Microsoft Excel sheet and analysed using SPSS version 21. Descriptive statistics was used as basis for statistical analysis.

Frequency and percentage was used for categorized variables. Z test for proportions was used to compare the pre and posttest knowledge and attitude among the school students regarding prevention of common childhood diseases. The statistical significance was evaluated at 5% level of significance.

RESULTS

Out of the 200 study participants, 112 were boys and 88 were girls. Table 1 displays the sex and age wise distribution of the study population. It indicated that out of 200 students studied, majority of students were in the age group of 11 years (116 students) followed by 10 year olds (44 students) and then 9 year olds (40 students).

Among both boys and girls, majority were in the group of 11 years old (total of 68 boys and 48 girls).

On analysing knowledge component for cleaning the wound it was seen that only 27% responded with correct answer, which was increased to 93% after edutainment and was found to be highly statistically significant. Where to drink water from it was seen that only 31% responded with correct answer, which was increased to 84% after edutainment which was found to be highly statistically significant. On whether pan masala effect on health it was seen that only 33% responded with correct answer which was increased to 90% after edutainment which was found to be highly statistically significant.

Table 1: Age and sex distribution of study population.

Age (in years)	Girls No. (%)	Boys No. (%)	Total No. (%)
9	16 (40)	24 (60)	40 (100)
10	24(55)	20 (45)	44 (100)
11	48 (41)	68 (59)	116 (100)
Total	88 (44)	112 (56)	200 (100)

Table 2: Knowledge assessment among study participants pre and post educational intervention.

Knowledge questions	Percentage of correct response						P value
	Boys (%)		Girls (%)		Total (%)		
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	
How would you clean a wound or injury?	28.6	94.6	25.0	90.9	27.0	93.0	<0.001
What do you do when you are not well?	46.4	98.2	40.9	97.7	44.0	88.0	<0.001
How many glasses of milk should you drink in one day?	10.7	89.3	22.6	90.9	16.0	90.0	<0.001
How many liters of water should you drink in one day?	17.9	83.9	13.6	90.9	16.0	87.0	<0.001
Where all you can drink water from?	33.9	80.4	27.3	88.6	31.0	84.0	<0.001
What should you do while coughing/sneezing?	50.0	94.6	47.7	100.0	49.0	97.0	<0.001
Before eating fruits and vegetables what should you do?	42.9	91.1	45.5	95.5	36.0	97.0	<0.001
Guttka and Beedi are harmful	39.3	98.2	31.8	95.5	36.0	97.0	<0.001
If you chew guttka or smoke beedi what will happen?	23.2	85.7	25.0	84.1	24.0	85.0	<0.001
Would you wash your hands after you go to the toilet?	19.6	85.7	25.0	81.8	22.0	84.0	<0.001
How many times a year should you go to the doctor?	12.5	83.9	9.1	88.6	11.0	86.0	<0.001
When should you wear shoes and socks/slippers?	33.9	89.3	54.5	95.5	43.0	92.0	<0.001
Nails trimming	39.3	87.5	45.5	93.2	42.0	90.0	<0.001
Eating pan masala is harmful	30.4	91.1	36.4	88.6	33.0	90.0	<0.001
When should you change your clothes?	48.2	89.3	47.7	88.6	48.0	89.0	<0.001

Table 3: Attitude assessment among study participants pre and post educational intervention.

Attitude questions	Percentage of correct response						P value
	Boys (%)		Girls (%)		Total (%)		
	Pre-test	Post-test	Pre-test	Post-test	Pre-test	Post-test	
Opinion on bathing daily	19.6	85.7	25.0	81.8	22.0	84.0	<0.001
Opinion on how many times to bathe in a week	19.6	100.0	27.3	95.5	23.0	98.0	<0.001
Opinion on what to use to bathe	66.1	96.4	65.9	100.0	66.0	98.0	<0.001
Opinion on brushing teeth daily	91.1	100.0	93.2	97.7	92.0	99.0	<0.01
Opinion on how many times to brush teeth in a day	5.4	87.5	9.1	88.6	7.0	88.0	<0.001
Opinion on what to use to brush teeth.	42.9	98.2	38.6	90.9	41.0	85.0	<0.001
Opinion on washing hands after using the toilet	19.6	85.7	25.0	81.8	22.0	84.0	<0.001

On analysis of the attitude component for number of times to bathe in a week it was found that only 23% had a favourable attitude prior which was changed to 84% after the educational intervention which was found to be highly statistically significant and only 7% had a favourable attitude towards brushing twice a day which was raised to 88% after the educational intervention which was found to be highly statistically significant.

On assessment of the practice component it was found that around 24% were taking bath daily and 66% used soap and water to bathe. Only 7% brushed their teeth twice a day and 22% washed their hands after using the toilet regularly.

DISCUSSION

Health education is the key in reduction of preventable childhood diseases. There is a dire need for health education given through interesting ways to children to understand better and remember to implement relevant practices regarding health and hygiene in their environment.

The present study revealed that the knowledge level prior to educational intervention was only 31.86% regarding basic necessary knowledge like cleaning a wound, nutrition, personal hygienic practices, what to do when sneezing, where to drink water from, when to wear footwear, nail hygiene etc. These topics when not practiced properly might lead to diseases like enteric fever, fungal infections, diarrhoea, infection of wounds etc. Post educational intervention it was seen that the knowledge levels increased.

The present study reveals that the knowledge level prior to educational intervention were poor with respect to hygienic practices. These findings are in concordance with a study done by Motakpalli et al, which showed that personal hygiene is poor in children due to lack of knowledge and that schools need to pay more attention to health education of its pupils.¹¹

The attitude of the study participants prior to the educational intervention towards hygienic practices such as bathing daily, brushing their teeth daily and washing hands after using toilet was poor with only 39% having a favourable attitude towards these practices. Post educational intervention it was seen that favourable attitude towards these practices increased.

On assessing the practice of personal hygiene such as bathing, brushing their teeth and washing their hands after using the rest room, it was seen that only 39% of the study participant practised good hygiene. This can lead to a number of preventable childhood diseases and increase morbidity which was shown in the study conducted by Deb, Dutta, Dasgupta, Misra. Relationship of personal hygiene with nutrition and morbidity profile: A study among primary school children in South Kolkata.¹²

The present study showed that educational intervention is a good source of delivering health education in an easy, fun and favourable way to children in which they react and respond to health education in an enthusiastic manner.

The findings of this study are in concordance with the studies by Sinor and by Barclay et al, which showed that educational intervention is an effective tool in imparting knowledge.^{10,13}

CONCLUSION

The results of this study show that the Interactive story board was successful in providing educational intervention in 9 to 11 year old in rural Bangalore as it helped in increasing their Knowledge and attitude towards practices which may help to prevent common avoidable childhood diseases as there is a significant favourable rise post educational intervention supporting the effectiveness of the interactive story board.

Further research is necessary on whether educational intervention is effective in the long run and if it can be applied to various

other medical aspects like educating a patient about any diseases or syndromes that they might be suffering from or helping them better understand their ailment and how to manage it.

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