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Effectiveness of planned instructional module regarding knowledge about health hazards of junk food among high school children at Erayamangalam village

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Abstract
The children of today and will be the adult of tomorrow, central to this vision of the future, focusing on today's children and educating them to change their behaviour towards wealthy eating pattern is necessary. Nutritional problem is one of the major health problem faced by billions of children of all age groups. Preventive approach to maintain good health with specific education can be greater benefit for the children to prevent mental and physical ailments. The present study is aim to create awareness among school children regarding health hazards of junk foods. Objectives of the study to assess the level of knowledge on health hazards of junk food among school children before planned instructional module (pre-test), to assess the level of knowledge on health hazards of junk food among school children after planned instructional module (post-test), to determine the effectiveness of planned instructional module among school children, to find the association between selected demographic variables and the level of knowledge among school children. Quasi experimental research design was adopted. The study was conducted in government high school at Erayamangalam village in Thiruvallur district. About 30 students were selected by randomized method. The instruments used for data collection are demographic variable and Semi Structured questionnaire method to assess the knowledge regarding health hazards of junk foods. Followed by Health Education given regarding health hazards of junk foods with instructional module After 7 days post-test was done for the same children with structured questionnaire method. The collected data was analysed by using descriptive and inferential statistics. Based on the findings of the study it can be concluded that there was evident increase in the knowledge scores in the areas include in the study after of health education. Thus it was proved that health education was effective for creating awareness regarding health hazards of junk food among junk food of selected schools in Erayamangalam village.

Keywords: Instructional module, health hazards and junk food

Introduction

Food is any substance consumed to provide nutritional support for the body. It is usually of plant or animal origin & contains essential nutrients such as carbohydrates, fats, proteins; vitamins or minerals. Any food that has poor nutritional value is considered unhealthy and may be called a junk food. A food that is high in fat- especially Trans-fat, sodium and sugar is known as a junk food.

School-age children often face health related nutritional problems, when they enter the school environment there will be changes in their habits, lifestyle and particularly in their food habits. Moreover, the growth rate and health are closely interrelated with quality and quantity of foods and the information related to health status and nutrition status of this group is an important health issue in terms of prevalence of underweight and overweight.

The director of the Centre for Science, Michael Jacobson invented the term junk food called "Empty calories". He was accredited as the "chief of the food police" by the food industry, for uncovering the harmful effects of junk food with its use of additives such as vibrant food colours, Salt and Tran's fat.

His intent was to boost awareness among people, regarding Junk food that contains low nutritional value, high calories, high sugar and high fat which often lead to many life-threatening ailments. That junk food can affect a child's physical development in different ways, including unhealthy weight gain, which can result in self-esteem problems. Low self-esteem can lead to consequences like depression. Nutritionists at MayoClinic.com

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also report eating junk food can potentially cause depression on its own.

Generally, a junk food is given a very attractive appearance by adding food additives and colours to enhance flavour, texture, appearance, and increasing long shelf life. Junk food can be appealing for a variety of reasons, including convenience, price and taste. For children, who do not always understand the health consequences of their eating habits, junk food may appear especially appetizing. However, regularly consuming fattening junk food can be addictive for children and lead to complications like obesity, chronic illness, low self-esteem and even depression, as well as affecting how they perform in school and extracurricular activities Food habits and patterns are formed during childhood and will remain till the end of individual's life. Proper nutrition in this age causes child growth and development and also reduces the risk of chronic diseases in adulthood.

School-age children often face health related nutritional problems, when they enter the school environment there will be changes in their habits, lifestyle and particularly in their food habits. Moreover, the growth rate and health are closely interrelated with quality and quantity of foods and the information related to health status and nutrition status of this group is an important health issue in terms of prevalence of underweight and overweight.

In many cases, adulthood obesity starts from childhood and effective prevention depends upon the way you cope with and control obesity in this age. Prevalence of obesity in 6 to 10-year old children estimated 10 to 30 per cent is considered as one of the basic issues in this age group.

Nowadays, consumption of junk foods as snacks is increasing especially among primary school students. Change of food consumption pattern during few recent decades caused replacement of valueless foods with nutritious snacks. Increasing trend of urban life, extensive TV advertising, attractive packaging and lack of nutritional knowledge and awareness by parents are the major causes of junk food consumption. Nutrition during this formative period has a meaningful long-term effect, providing building blocks to construct the growing brain. The brain is highly susceptible to oxidative stress, so a healthful, antioxidant-rich diet is especially beneficial for the brain and is likely involved in this link between natural plant foods and higher IQ scores. The rising accommodation of „junk food," in daily meal is heavily contributing in making the human body a junkyard, as they carry infinite nutritional value. This has become a cause of worry, as children in their formative years should be given highly nutritious food to make the foundation of their life stronger. On the contrary, the growing consumption of fast foods has resulted in making the children fall prey to hazardous disease conditions like Diabetes, Obesity, high cholesterol level and various nutritional deficiencies. Nutritional intake during school age is important for growth and development, long term health promotion for lifelong eating habits. Nutritional intake during this period will have long term implications. Several physical, psychological and behavioural changes may affect food habits during school age and have long term consequences on Children health status. The present scenario shows that many of the adult diseases have their origin in their childhood; this is due to lack of proper knowledge and awareness about the consequences of changes in their food habits.

The objectives of the study
1. To assess the level of knowledge regarding health hazards of junk foods among school children.
2. To determine the effectiveness of planned instructional module on level of knowledge regarding health hazards of junk foods among school children among school children.
3. To associate between the selected demographic variables and the level of knowledge about health hazards of junk foods among school children.

Methods and Materials
A qualitative approach with quasi experimental research design was used to conduct the study in Government High school at Erayamangalam in Thiruvallur district. 30 samples were selected by randomized sampling technique. The criteria for sample selection High school students aged 13-16 years; High school students who know speak and read Tamil. Exclusion criteria for the samples are High school students who are not willing to participate in the study, High school students who are not available during data collection. The data collection was done with prior permission from the Principal of the School. The purpose of the study was explained to the samples and written informed consent was obtained from them. The demographic data were collected from using Semi structured questionnaire. Health Education given regarding health hazards of junk foods with instructional module. After 7 days post-test was done for the same children with Semi structured questionnaire method. The collected data was analysed by using descriptive and inferential statistics.

Result and Discussion
Section A: Demographic characteristics
Among 30 samples, all the 30 samples where most of the school children 27(90%) were in the aged group of 10 – 12 years, 22(73.3%) were female, 30(100%) were residing in rural area, 18(60%) of fathers were educated up to primary school level, 17(56.7%) of mothers were educated up to secondary school level, 15(50%) of fathers were coolie, 17(56.7%) of mothers were homemakers, 16(53.4%) had a family income of Rs.1000 – 5000 per month, 23(76.7%) belonged to nuclear family, 18(60%) had two children in the family, 21(70%) spent below Rs.50 as pocket money per month, 19(63.3%) had no frequency of eating junk food per day, 11(36.7%) used to eat junk food during school interval, 13(43.3%) used to consume junk food at junk food shops or fast food corner, 21(70%) had not obtained any previous information regarding junk food and 21(70%) received previous information through friends and relatives.

Section B: Assess the level of knowledge on health hazards of junk food among school children

Table 1: Show the knowledge of health hazards of junk food among school children details

Knowledge	Inadequate Knowledge (0 – 50%)		Moderate knowledge (51 – 75%)		Adequate knowledge (76 – 100%)	
	No.	%	No.	%	No.	%
Pre-test	30	100.0	0	0	0	0
Post Test	0	0	2	6.67	28	93.33

The major finding of the study shows that the pre-test, all 30(100%) had inadequate knowledge on hazards of junk

foods among school children. Frequency and percentage distribution of level of knowledge on hazards of junk foods among school children.

Section C: Effectiveness of planned instructional module regarding knowledge about hazards of junk foods among school children. N = 30

Table 2: The knowledge of paired

Knowledge	Mean	S.D.	Paired 't' test value
Pre-test	3.50	2.36	t = 29.487
Post-test	21.77	2.01	$p = 0.0001$ S***

***$p<0.001$, S – Significant

Comparison of pre-test and post-test knowledge scores

about hazards of junk foods among school children. The pre-test mean score of knowledge score was 3.50 with standard deviation 2.36 and the post-test mean score of knowledge was 21.77 with standard deviation 2.01. The calculated paired 't' test value of t = 29.487 was found to be statistically highly significant at $p<0.001$ level. This clearly infers that planned instructional module regarding knowledge administered to school children resulted in a significant improvement in the level of knowledge about hazards of junk foods among school children.

Section D: Association of post-test level of knowledge about hazards of junk foods among school children with their selected demographic variables. N = 30

Table 3: Demographic variables

Demographic variables	Inadequate knowledge (0 – 50%)		Moderate knowledge (51 – 75%)		Adequate knowledge (76 – 100%)		Chi-square test value
	No.	%	No.	%	No.	%	
Age in years							$\chi^2 = 3.810$ d.f = 1 $p = 0.051$ N.S
8 – 9	-	-	-	-	-	-	
9 – 10	-	-	-	-	-	-	
10 – 12	-	-	1	3.3	26	86.7	
13 – 16	-	-	1	3.3	2	6.7	
Sex							$\chi^2 = 0.597$ d.f = 1 $p = 0.440$ N.S
Male	-	-	1	3.3	7	23.3	
Female	-	-	1	3.3	21	70.0	
Residential area							-
Urban	-	-	-	-	-	-	
Rural	-	-	2	6.7	28	93.3	
Educational status of the father							$\chi^2 = 2.768$ d.f = 2 $p = 0.251$ N.S
Non literate	-	-	0	0	8	26.7	
Primary school level	-	-	1	3.3	17	56.7	
Secondary school level	-	-	1	3.3	3	10.0	
Educational status of the mother							$\chi^2 = 2.820$ d.f = 2 $p = 0.244$ N.S
Non literate	-	-	1	3.3	3	10.0	
Primary school level	-	-	0	0	9	30.0	
Secondary school level	-	-	1	3.3	16	53.4	
Occupation of the father							$\chi^2 = 3.701$ d.f = 2 $p = 0.157$ N.S
Salaried	-	-	2	6.7	9	30.0	
Business	-	-	0	0	4	13.3	
Coolie	-	-	0	0	15	50.0	
Occupation of the mother							$\chi^2 = 3.214$ d.f = 2 $p = 0.200$ N.S
Salaried	-	-	2	6.7	10	33.3	
Business	-	-	0	0	1	3.3	
Homemaker	-	-	0	0	17	56.7	
Family income per month							$\chi^2 = 1.875$ d.f = 2 $p = 0.392$ N.S
1000 – 5000	-	-	2	6.7	14	46.7	
5000 – 10000	-	-	0	0	10	33.3	
Above 15000	-	-	0	0	4	13.3	
Type of family							$\chi^2 = 0.852$ d.f = 1 $p = 0.356$ N.S
Nuclear family	-	-	1	3.3	22	73.4	
Joint family	-	-	1	3.3	6	20.0	
Total number of children in the family							$\chi^2 = 8.571$ d.f = 2 $p = 0.014$ S*
One	-	-	2	6.7	4	13.3	
Two	-	-	0	0	18	60.0	
Three	-	-	0	0	6	20.0	
Pocket money per month							$\chi^2 = 0.918$ d.f = 1 $p = 0.338$ N.S
No pocket money	-	-	-	-	-	-	
Below Rs.50	-	-	2	6.7	19	63.3	
Rs.50 – 100	-	-	0	0	9	30.0	
The frequency of eating junk food per day							$\chi^2 = 1.241$
Nil	-	-	-	-	-	-	

1 – 3 times	-	-	2	6.7	17	56.6	d.f = 1
More than 3 times	-	-	0	0	11	36.7	p = 0.265 N.S
Reason to eat junk food							$\chi^2 = 1.104$ d.f = 2 p = 0.576 N.S
The frequency of eating junk food per day							$\chi2 = 1.241$ d.f = 1 p = 0.265 N.S
Nil	-	-	-	-	-	-	
1 – 3 times	-	-	2	6.7	17	56.6	
More than 3 times	-	-	0	0	11	36.7	
Reason to eat junk food							$\chi2 = 1.104$ d.f = 2 p = 0.576 N.S
Feel hungry	-	-	1	3.3	8	26.7	
Time passing	-	-	0	0	10	33.3	
School interval	-	-	1	3.3	10	33.3	
From where do you consume junk food							$\chi2 = 2.411$ d.f = 2 p = 0.300 N.S
From house	-	-	1	3.3	4	13.3	
School canteen	-	-	1	3.3	11	36.7	
Junk food shops or fast food corner	-	-	0	0	13	43.3	
Have you obtained any previous information regarding junk food?							$\chi2 = 0.408$ d.f = 1 p = 0.523 N.S
Yes	-	-	1	3.3	8	26.7	
No	-	-	1	3.3	20	66.7	
Source of previous information regarding health hazards of junk food through							$\chi2 = 0.918$ d.f = 2 p = 0.632 N.S
Mass media	-	-	1	3.3	6	20.0	
Friends and relatives	-	-	1	3.3	20	66.7	
Health personnel	-	-	0	0	2	6.7	

*$p<0.05$, S – Significant, N.S – Not significant

It's shows that the demographic variable total number of children in the family had shown statistically significant association with post-test level of knowledge about hazards of junk foods among school children at $p<0.05$ and the other demographic variables had not shown statistically significant association with post-test level of knowledge about hazards of junk foods among school children.

Conclusion
Based on the findings of the study it can be concluded that there was evident increase in the knowledge scores in the areas include in the study after of health education. Thus it was proved that health education was effective for creating awareness regarding health hazards of junk food among junk food of selected schools in Erayamangalam village.

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Author's contribution
All the authors actively participated in the work study. All authors read and approved the final manuscript.

Conflicts of interest
The authors declare no conflicts of interest.

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