Identification of crucial message for nutrition education for school children

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ABSTRACT : Nutrition education of the school child is of paramount importance as the healthy children are supreme wealth of the nation because the foundation for life time, health, strength and intellectual vitality is laid during this period. Maintaining a balanced diet and regular exercise is important for all individuals, especially school-aged children (6-12 years). These children are required to eat a variety of foods from each food group to ensure optimal intake of all vitamins, proteins and minerals. At the same time, they may face new challenges regarding food choices and habits. So, decisions about what to eat are partly determined by what is provided in school, at home, the influences from friends at school, and the media, especially television. For taking these points in mind, different crucial message were identified for nutrition education for school children. Hence, study was conducted in Hisar district of Haryana State. The results showed that from the list of fourteen main messages and thirty seven sub-messages three main messages *viz.*, balance diet, protective foods and food hygiene were identified with its thirteen sub-messages *viz.*, 'importance of balanced diet', 'functions of balanced diet', 'food group' and 'nutritional requirement of school children'.

KEY WORDS : Nutrition education, School children, Food consumption

INTRODUCTION

Nutrition education in schools provide a special medium for nutrition education and for intervention to improve children's health and nutritional status. Beside, this it helps children in acquiring nutrition knowledge and to develop and encourage desirable eating habits and food choices. On the consequents, Children can also help in changing the eating habits of their families by demanding desirable food, and when they themselves become parents in the future, they can impart good dietary habits to their children. As the children are the future of the country. The importance of child health has been described by many ancient Unani physicians. In India, children under 15 years of age constitute about 40 per cent of the population. School children constitute a large pool of children of this age group. Nutritional status is a major component of school health services. A child's entire life is determined in large measures by the food given to him during his first five years. Because childhood period is of rapid growth and development, and nutrition is one of the influencing factors in this period. Malnutrition causes a great deal of physical and emotional suffering and it is a violation of a child's human rights. Malnutrition substantially rises the risk of infant and child deaths, and increases vulnerability to a variety of diseases in later life. Children who are undernourished and underweighed are likely to be fewer cleavers than if they were well fed. Health of children is of great importance as rapid growth occurs during this period. Good nutrition is a basic

requirement for good health and a living organism is a product of nutrition (Shashi, 1990; Begum, 1997; Shills and Young, 1998 and Hasan *et al.*, 2011). Therefore, attaining optimal nutrition involves eating three meals a day and two nutritious snacks, as well as limiting the intake of high sugar and high fat foods. Consuming generous amounts of fruits, vegetables, lean meats and low fat dairy products, including three servings of milk, cheese or yoghurt to meet their calcium requirement, can also prevent many medical problems. This includes becoming overweight, developing weak bones, and developing diabetes. Adequate nutrition of school aged children will also ensure they grow to their full potential, and provide the stepping stones to a healthy life. Omar (2000) reported that the nutritional status of children depends to a great extent on the type of foods they eat. Meal planning in the family is affected by many factors especially nutritional habits, socio-economic status and availability of foods.

METHODOLOGY

The study was carried out on 120 students of 9th and 10th class in two schools of Muklan village, from Hisar district of Haryana State. 'Protective foods' was identified one of the crucial messages on the basis of importance of messages for school children by judges. Out of the list of various nutritional messages, three main messages *viz.*, 'balanced diet' 'protective foods' and 'food hygiene' and thirteen sub-messages were identified crucial messages were identified on the basis of importance of those messages for school children by judges.

OBSERVATION AND ASSESSMENT

The results obtained from the present investigation are summarized below :

Food consumption pattern of school children :

It is clear from the Table 1 that as regard cereals, all the respondents consumed wheat daily. Other cereals such as rice bajra and maize were consumed weekly by most of the respondent (65, 62 and 75), respectively. However, as much as 55, 36 and 45 of the respondents consumed these cereals monthly. Furthermore, Table reveals that bajra was consumed daily by 22 of the respondents. No other cereal except wheat was consumed daily.

Further, Table also depicts that the consumption of pulses among most of the respondents (52 to 92) was weekly, followed by 35 to 68 who consumed the pulses monthly. Only 4 and 12 respondents consumed bengal gram and green gram daily.

As regards leafy vegetables most of the respondents (65 to 73) consumed leafy vegetables monthly, while only (47 to 55) of the respondents consumed leafy vegetables weekly. None of the respondents consumed leafy vegetables daily.

Regarding roots and tubers, onion and potato were consumed daily by few respondents (22 and 20). While most of the respondents consumed these vegetable's weekly. Rest of the roots and tubers *i.e.* raddish, carrot, turnip and Arbi were consumed monthly by most of the respondent (68 to 87).

As far as other vegetables, most of the respondents consumed, tomato, green chillies and cucurbits weekly 85, 73 and 84, respectively. Brinjal and lady finger were consumed monthly by majority of the respondents (69 and 100, respectively). However, only 15 and 20 respondents consumed tomato and green chillies daily.

Regarding fruits, only lemon was consumed weekly by most of the respondents (81), while other fruits like, apple, guava, orange, banana and mango were consumed monthly by most of the respondents (66 to 80). Some of the respondents consumed apple, orange and mango rarely (23, 9 and 6).

The table further shows that most of the respondents consumed milk and butter milk daily (53 and 57) followed by 45 and 42 who consumed milk and butter milk weekly. While curd and butter were consumed weekly by most of the respondents (62 and 66), about one third (21 and 39) of the respondents consumed curd and butter milk monthly.

Regarding fats and oils most of the respondents (67 and 85) consumed hydrogenated fat and mustard oil weekly. While 55 and 61 consume deshi ghee and refined oil monthly, these were consumed daily by only 15 and 20 of the respondents.

It is thus clear from Table 3 that though cereals, pulses, roots and tubers, other vegetables, milk and milk products and fats and oils were consumed daily to weekly by most of the respondents. Leafy vegetable and fruits were consumed less frequently or rarely by most of respondents.

Identification of crucial messages relevant for school children :

A list of fourteen main message and thirty seven sub-messages was prepared in consultation with reviews, text books and available literature. Then the prepared list was subjected to the 20 judges, to find out their relevancy for school children. Those messages which got weighted mean score more than 2.3 were selected for the dissemination.

Thus, it can be seen from Table 2 that from the first main message *i.e.* balanced diet, all the four sub-messages *viz.*, 'importance of balanced diet, functions of balance diet, food groups and nutrition requirement of school children were selected. From 'classification of foods' only one sub-message *i.e.* "protective food" was selected for inclusion, from 'function of nutrients' and 'sources of nutrients' three sub-messages each *i.e.* protein, vitamin and minerals were selected. Regarding 'nutrients deficiency' and 'symptoms,' two messages *i.e.* 'vitamin A deficiency,' and 'iron deficiency' were included.

Seventh message *i.e.* 'management of diseases with foods' was rejected, while from 'meal planning for school children' one message *i.e.* 'dietary requirements' was selected

Table 1 : Food consumption pattern of children

Sr. No.	Food stuff	Frequency of consumption			
		Daily	Weekly	Monthly	Rarely
1.	**Cereals**				
	Wheat	120	---	---	---
	Rice	---	65	55	---
	Bajra	22	62	36	---
	Maize	---	75	45	---
2.	**Pulses**				
	Bengal gram	4	63	53	---
	Black gram	---	52	68	---
	Green gram	12	67	41	---
	Moth bean	---	85	35	---
	Lentil	---	93	27	---
3.	**Leafy vegetable**				
	Bathua	---	52	68	---
	Fenugreek leaves	---	47	73	---
	Bengal gram leaves	---	48	72	---
	Spinach	---	50	70	---
	Mint	---	54	66	---
	Mustard leaves	---	55	65	---
4.	**Roots and tubers**				
	Radish	---	52	68	---
	Carrot	---	49	71	---
	Potato	22	68	30	---
	Onion	20	60	40	---
	Turnip	---	35	85	---
	Arbi	---	23	87	---
5.	**Other vegetable**				
	Brinjal	---	51	69	---
	Tomato	15	85	20	---
	Green chillies	20	73	27	---
	Lady finger	---	20	100	---
	Cucurbits	---	84	36	---
6.	**Fruits**				
	Apple	---	50	67	23
	Guava	---	40	80	---
	Banana	---	44	76	---
	Lemon	---	81	39	---
	Orange	---	45	66	09
	Mango	---	36	78	06
7.	**Milk and milk products**				
	Milk	53	45	22	---
	Curd	17	62	21	---
	Butter milk	57	42	11	---
	Butter	15	66	39	---
8.	**Fats and edible oils**				
	Desi ghee	15	50	55	---
	Hydrogenated fat	---	67	53	---
	Refined oil	---	59	61	---
	Mustard oil	20	85	15	---

Table 2 : Identification of messages relevant for school children

Sr. No.	Messages	Judges consensus			
		M.R.	R.	L.R.	Weighted mean
1.	**Balanced diet**				
	Importance of balanced diet	19 (63.3)	8(26.6)	3(10.0)	2.53*
	Functions of food	21(70.5)	5(16.6)	5(16.6)	2.56*
	Nutritional requirement for school children	26(86.6)	3(10.0)	1(3.3)	2.70*
	Food groups	23(76.6)	5(16.6)	2(3.3)	2.86*
2.	**Classification of foods**				
	Energy giving foods	18(63.3)	4(13.3)	8(26.6)	2.3
	Protective foods	25(83.3)	4(13.4)	1(3.3)	2.8*
	Body building foods	18(63.3)	4(13.3)	8(26.6)	2.3
3.	**Functions of nutrients**				
	Protein	16(53.3)	6(20)	8(26.6)	2.26*
	Carbohydrates	18(63.3)	4(13.3)	8(26.6)	2.3
	Fats	17(56.6)	5(16.6)	8(26.6)	2.3
	Vitamins	25(83.3)	4(13.4)	1(3.3)	2.8*
	Minerals	27(90)	2(6.7)	1(3.3)	2.86*
4.	**Sources of nutrients**				
	Protein	26(86.6)	2(6.7)	2(6.7)	2.8*
	Carbohydrates	16(53.3)	4(13.4)	10(33.3)	2.2
	Fat	15(50)	5(16.7)	10(33.3)	2.16
	Vitamins	26(86.6)	3(10)	1(3.3)	2.83*
	Minerals	26(86.6)	3(10)	1(3.3)	2.83*
5.	**Nutrients deficiency and symptoms**				
	Protein-energy malnutrition	16(53.3)	5(16.7)	9(30)	2.23
	Vitamin-A deficiency	26(86.6)	2(6.7)	2(6.7)	2.8*
	Vitamin B-complex deficiency	15(50)	5(16.7)	10(33.3)	2.16
	Iron deficiency	26(86.6)	4(13.4)	0	2.86*
	Iodine deficiency	12(73)	6(10)	7(16.7)	2.27
7.	**Management of disease with food**				
	Foods to be avoided	17(56.6)	6(20)	7(23.3)	2.27
	Foods to be given	19(63.3)	4(13.3)	7(23.3)	2.3
8.	**Meal planning far school children**				
	Menu planning	17(55.6)	6(20)	7(23.3)	2.27
	Dietary requirement	25(83.3)	4(13.4)	1(13.3)	2.8*
9.	**Food hygiene**				
	Importance of food hygiene	26(86.6)	3(10)	1(3.3)	2.83*
	Causes of food poisoning	25(86.6)	3(10)	2(6.7)	2.76*
	Prevention of food poisoning	25(86.6)	2(6.7)	3(10)	2.73*
10.	**Safe drinking water**				
	Importance of safe drinking water	26(86.6)	3(10)	1(3.3)	2.83*
	Causes of water contamination	20 (66.6)	7(33.3)	3(10.0)	2.56*
	Safe source of drinking water	24 (80.0)	4(13.4)	2(6.6)	2.73
	Methods to clear the water	21 (70.0)	5(16.7)	2(6.6)	2.56
11.	**Polluted water and food related disease**				
	Diarrhoea	25(86.6)	4(13.4)	1(3.3)	2.8*
	Malaria	19(63.3)	6(20.0)	5(16.6)	2.46
	Typhoid	21(70.0)	7(3.33)	1(6.6)	2.63
	Cholera	23(76.6)	4(13.4)	3(10.0)	2.66
12.	Food fads and taboos	17(56.6)	5(16.7)	8(26.6)	2.3
13.	Methods of food preparation	16(53.3)	6(20)	8(26.6)	2.26
14.	Conservation of loss of nutrients during cooking	15(50)	7(23.3)	8(26.6)	2.23

Mean score* < 2.3 were not selected for dissemination

Table 3 : Identified crucial message on nutrition education

Sr. No.	Identified messages	Identified sub components
M₁	Balance diet	Importance of balance diet
		Function of balance diet.
		Nutritional requirement of school children.
		Food groups.
M₂	Protective foods	Concept of protective foods
		Functions of protective foods.
		Sources of protective foods.
		Deficiency disease and prevention.
M₃	Food hygiene	Concept and importance of food hygiene.
		Safe drinking water.
		Causes of water and food contamination
		Water and food related diseases.
		Safe sources of drinking water.

for inclusion. All the three sub-messages of 'food hygiene' *viz.*, safe drinking water' and 'water and food related disease' were selected for inclusion in the media. While 'food fads A taboos,' 'methods of food preparation' and 'conservation of nutrients' were perceived as least relevant by most of the respondents and thus rejected.

Indentified crucial message on nutritional education :

Out of the list of various nutritional messages, three main messages and thirteen sub-messages were identified as per judges' scoring. Various selected sub-messages were categorized into three main messages (Table 3).

The first message selected was 'balanced diet' with its four sub-message *viz.*, 'importance of balanced diet', 'functions of balanced diet', 'food group' and 'nutritional requirement of school children'.

'Protective foods' was another important aspect selected for dissemination to children and it contained four sub-messages such as 'concept of protective foods', 'functions of protective foods', sources of protective foods', and 'deficiency diseases of protective foods'. Third crucial message identified was 'food hygiene' comprising of five sub messages *viz.*, 'concept and importance of food hygiene', 'causes of water and food contamination', 'importance of safe drinking water' and 'water and food related diseases'.

Conclusion :

It can be concluded that most of the school activities

pertaining to nutrition education were not carried out in both boys and girls schools. Regarding food consumption pattern of the respondents, pulses, milk products and other vegetables were consumed weekly by most of the respondents while fruits and leafy vegetables were consumed monthly by most of the respondents.From the list of fourteen main messages and thirty seven sub-messages three main messages *viz.*, balance diet, protective foods and food hygiene were identified with its with its thirteen sub-messages.

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