

Impact of Nutrition Education on Knowledge Gain of Mothers and Rural School Going Children of Fatehabad District, Haryana

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Abstract: The present study was conducted to assess the impact of nutrition education on nutritional knowledge of 50 rural school going children (10-12 years) and their mothers for two months at 15 days interval in Fatehabad district, Haryana, India. The nutritional knowledge was studied using pre-tested questionnaire. Pre-scores of nutrition knowledge indicated that most of the mothers had inadequate knowledge about various aspects of nutrition. Post-scores indicated a highly significant ($p \leq 0.01$) gain in knowledge scores of mothers. It was found that there was a significant gain in knowledge of mothers regarding importance of balanced diet (3.58), source of nutrients in diet (3.72), importance of green leafy vegetables and fruits in diet (4.22), nutrient deficiency diseases and their prevention (4.16), conservation of nutrients (5.84) and care during illness/diseases and hygiene (6.42). The pre and post knowledge scores obtained before and after imparting nutrition education to the children, indicated that most of the children had inadequate knowledge about various aspects of nutrition before imparting nutrition education. However, post-scores indicated a highly significant ($p \leq 0.01$) gain in knowledge scores of children regarding the importance of balanced diet (1.92), nutrient deficiency diseases (3.82), sources of nutrients in diet and importance of green leafy vegetables (4.84) and hygiene & health (4.14).

Keywords: Nutrition, education, knowledge, rural school going children, mothers

1. Introduction

Nutritional status of the society depends on the nutritional awareness and knowledge of women of that society. It is well established that the school age period is nutritionally significant and highly demanding because this is period of growth spurt and body stores the nutrients for future use (Kumari and Jain, 2005). Adequate intake of food and nutrients by growing children specially school going ones is very crucial as it is the time when the development of body is taking place at high spurt and affects their physical fitness and mental well-being. Nutrition education plays a significant role in bringing a permanent and favourable solution to the problem of malnutrition among school children (Sati and Dahiya, 2012; and Ramchandran, 2013). Nutrition education imparted to mothers had shown an improvement in their knowledge level and which could ultimately improve the health status of their children (Shukla *et al.*, 2008; Rajbala *et al.*, 2012; Jain and Nagar, 2014). With the improvement in nutrition knowledge of mothers, nutritional status of children also improves. It is high time that nutrition education is included in the school curriculum as children are better able to retain nutrition knowledge gained at school level and when it is reinforced by favorable conditions in the home (Variyam *et al.*, 1999). So, to combat malnutrition among children integrated approach is required that will include assessment of nutritional status, imparting nutrition education, improvement in the socioeconomic conditions, easy access to health facilities and prevention of the gender discrimination (Ramzan *et al.*, 2008).

In spite of so many nutrition intervention programs, there has not been any decline in the prevalence of under nutrition, anemia, folic acid deficiencies and other micronutrients deficiencies among children. This may be

due to lack of nutrition education among mothers and children about sources of locally available nutrient rich food items and their functions in the body. It has also been observed that sometimes lack of knowledge about proper cooking and processing methods, lack of hygiene and sanitation in kitchen and home surroundings also leads to infections among children and thus inadequate utilization of food they are consuming. Thus it is very important to educate mothers and children about the importance of balanced diet, regular intake of fruits and vegetables, food hygiene and sanitation for improved nutritional status.. Keeping this in view the present study was done to assess the impact of nutrition education on knowledge gain of rural school going children and their mothers.

2. Methodology

The present study was conducted to assess the impact of nutrition education on nutritional knowledge of 50 rural school going children (10-12 years) and their mothers for two month at 15 days interval in Fatehabad district, Haryana, India. For the purpose of quantifying the qualitative data related to assessment of the extent of nutrition knowledge, a close ended knowledge inventory was prepared and responses were obtained under "yes" or "no" categories at the initial period i.e. before imparting nutrition education. Correct answer was given score „One“ and incorrect answer was given score „Zero“. The nutrition education was imparted on various aspects of foods and nutrition. Lectures were delivered with help of audio-visual aids i.e. charts, posters, leaflets, pamphlets, etc. After two months again the responses were obtained for assessing the gain in nutritional knowledge scores. Aggregated scores were computed to find out the pre and post knowledge scores and gain in knowledge was determined. The total

score for each parameter were combined and divided into three categories of adequate, marginally adequate and inadequate and codes were given as below:

Category	Scores(Level of knowledge)	Code
Inadequate	Below 50%	1
Marginally Inadequate	50-75%	2
Adequate	76-100%	3

Aggregate scores were computed to find out extent of nutritional knowledge possessed by respondents in the three categories. The scores were used for comparison of knowledge.

3. Results and Discussion

Knowledge gain of mothers

Data related to nutrition knowledge of mothers have been presented in Table 1. Before imparting nutrition education, the 28, 26, 36, 14, 40 and 18 per cent respondents had marginally adequate nutrition knowledge about the importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrient deficiency diseases and their prevention, conservation of nutrients and care during illness/diseases

and hygiene, respectively. Seventy two, 74, 64, 86, 60 and 82 per cent of the respondents had inadequate knowledge about the importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrient deficiency diseases and their prevention, conservation of nutrients and care during illness/diseases, respectively. After imparting nutrition education to the mothers with the help of audio-visual aids, there was increase in the knowledge of mothers. Sixty six, 72, 70, 68, 66 and 62 per cent of the mothers had adequate knowledge regarding importance of balanced diet, sources of nutrients in diet, importance of green leafy vegetables and fruits in diet, nutrients deficiency diseases and their prevention, conservation of nutrients and care during illness/diseases, respectively. It was observed that there was increase in the number of mothers who had adequate and marginally adequate nutrition knowledge after imparting nutrition education. Results of the present study were in conformity with the findings of other investigators (Manu and Khetarpaul, 2003; Chhabra and Boora, 2006; Chawla and Sharma, 2007; Rajbala, 2010) who also reported significant increase in the knowledge of mothers after imparting nutrition education. It is essential to provide proper nutrition education to mothers in order to make them aware about nutritional needs and efficient caretaker of the children.

Table 1: Assessment of nutritional knowledge of mothers of rural school going children before and after imparting nutrition education, (n=50)

Characteristics	Pre knowledge scores			Post knowledge scores		
	Adequate (76% and above)	Marginally adequate (50-75%)	Inadequate (Below 50%)	Adequate (76% and above)	Marginally adequate (50-75%)	Inadequate (Below 50%)
Balanced diet	-	14(28)	36(72)	33(66)	17(34)	-
Sources of nutrients in diet	-	13(26)	37(74)	36(72)	14(28)	-
Importance of Green Leafy Vegetable and fruits in diet	-	18(36)	32(64)	35(70)	15(30)	-
Nutrient deficiency diseases and their prevention	-	7(14)	43(86)	34(68)	16(32)	-
Conservation of nutrients	-	20(40)	30(60)	33(66)	17(34)	-
Care during illness/ diseases & hygiene	-	9(18)	41(82)	31(62)	19(38)	-

Values given in parentheses indicate percentage

The pre and post knowledge scores of mothers were obtained before and after imparting nutrition education to them. Pre-scores of nutrition knowledge indicated that most of the mothers had inadequate knowledge about various aspects of nutrition. Post-scores indicated a highly significant ($p \leq 0.01$) gain in knowledge scores of mothers (Table 2). It was found that there was a significant gain in

knowledge of mothers regarding importance of balanced diet (3.58), source of nutrients in diet (3.72), importance of green leafy vegetables and fruits in diet (4.22), nutrient deficiency diseases and their prevention (4.16), conservation of nutrients (5.84) and care during illness/diseases and hygiene (6.42).

Table 2: Gain in knowledge scores obtained by mothers of selected rural school going children (n=50)

Sr. No.	Component	Pre scores	Post scores	Gain in knowledge	t-value**
1.	Balanced diet	5.02±2.27	8.60±2.45	3.58±2.24	-11.29**
2.	Sources of nutrients in diet	4.80±2.41	8.52±2.61	3.72±2.72	-9.65**
3.	Importance of green leafy vegetables and fruits	2.96±1.35	7.18±1.96	4.22±1.52	-19.51**
4.	Nutrient deficiency diseases and their prevention	3.74±1.56	7.90±1.79	4.16±2.06	-14.25**
5.	Conservation of nutrients	5.80±2.52	11.64±2.23	5.84±3.02	-13.65**
6.	Care during illness/diseases & hygiene	6.54±2.79	12.96±1.93	6.42±3.05	-14.88**

Values are Mean ± SD

**Significant at 1% level

Knowledge gain of rural school going children

Table 3 depicted that initially 80, 82, 78 and 76 per cent of children had inadequate knowledge about the importance of

balanced diet, nutrient deficiency diseases, source of nutrients and importance of green leafy vegetables and hygiene & health, respectively. After imparting nutrition

education using audio-visual aids, 56 per cent of the children got adequate knowledge regarding importance of balanced diet, while 66, 70 and 74 per cent had adequate knowledge regarding nutrient deficiency diseases, sources of nutrients and importance of green leafy vegetables and hygiene & health, respectively. There was increase in the number of school going children who had adequate and marginally

adequate knowledge regarding various aspects of foods and nutrition. The pre and post knowledge scores obtained before and after imparting nutrition education to the children, indicated that most of the children had inadequate knowledge about various aspects of nutrition before imparting nutrition education

Table 3: Assessment of nutritional knowledge of rural school going children before and after imparting nutrition education (n=50)

Characteristics	Pre knowledge scores			Post knowledge scores		
	Adequate (76% and above)	Marginally adequate (50-75%)	Inadequate (Below 50%)	Adequate (76% and above)	Marginally adequate (50-75%)	Inadequate (Below 50%)
Balanced diet	-	10(20)	40(80)	28(56)	22(44)	-
Nutrient deficiency diseases	-	9(18)	41(82)	33(66)	17(34)	-
Sources of nutrients in diet and importance of green leafy vegetables	-	11(22)	39(78)	35(70)	15(30)	-
Hygiene & health	-	12(24)	38(76)	37(74)	13(26)	-

Values given in parentheses indicate percentage

Table 4: Assessment of nutritional knowledge of rural school going children, (n=50)

Sr.No.	Component	Pre scores	Post scores	Gain in knowledge	„t-value“
1.	Balanced diet	4.32±2.68	6.24±2.15	1.92±1.45	-9.33**
2.	Nutrient deficiency diseases	3.28±1.14	7.10±1.61	3.82±1.94	-13.95**
3.	Sources of nutrients in diet and importance of green leafy vegetables	2.04 ±1.35	6.88±2.96	4.84±1.52	-23.28**
4.	Hygiene & health	3.56±1.56	7.70±1.46	4.14±1.55	-18.86**

Values are Mean ± SD

**Significant at 1% level

(Table 4). However, post-scores indicated a highly significant ($p \leq 0.01$) gain in knowledge scores of children regarding the importance of balanced diet (1.92), nutrient deficiency diseases (3.82), sources of nutrients in diet and importance of green leafy vegetables (4.84) and hygiene & health (4.14). The results of the present study were in agreement with those of other investigators (Sharma *et al.*, 2007; Ayieko and Anyango, 2011; Alharbi, 2013) who reported that nutrition counselling imparted to children and their mothers helped to improve the nutritional status of not only school going children but also their families.

4. Conclusion

Pre-scores of nutrition knowledge revealed that most of the mothers and children had inadequate knowledge about various aspects of nutrition. A significant gain in knowledge scores (1.92 to 4.84) of rural school going children and that of mothers (3.58 to 6.48) was found after imparting nutrition education regarding various aspects of nutrition. Thus there is great scope that if nutrition education and awareness is created on nutritional importance of balanced diet, hygiene and care during illness is imparted to masses it could be an encouraging step towards improvement in nutritional status of masses.

5. Recommendations

There is urgent need to provide nutrition education to rural school going children and their mothers which will go a long way in improving not only their nutritional status but also of the society as a whole.

References

- [1] **Alharbi, FF (2013).** Mothers' knowledge of child nutrition. American Psychological Association, 6th edition. Research report is submitted to the University of Wisconsin-Stout, Graduate School.
- [2] **Ayieko, M.A. and Anyango, J.L. (2011).** Evaluation of nutrition knowledge and perception of good food among nursery school pupils in Kisumu Municipality-Kenya. *Adv. J. Fd, Sci. Tech.* 3(3): 165-172.
- [3] **Chawla, P. K. and Sharma, S. (2007).** Nutritional status and mental ability of school girls (7-9 years) as influenced by nutrition counseling. *J. Hum. Ecol.*, 22(1): 1-5.
- [4] **Chhabra, B. and Boora, P. (2006).** Impact of nutrition education on nutrition knowledge of mothers. *Annals Agri-Bio. Res.* 11(2): 189-192.
- [5] **Jain, S. and Nagar, V. (2014).** Nutrient consumption and hygiene and sanitation practices of primary school. *Sch. Acad. J. Biosci.* 2 (7): 428-431.
- [6] **Kumari, S. and Jain, R. (2005).** Assessment of nutritional status of school children from rural Bihar. *Ind. J. Nutr. Dietet.* 42: 326-34.
- [7] **Manu and Khetarpaul, N. (2003).** Impact of nutritional education on the knowledge of mothers. *J. Family Ecol.* 5(1&2): 57-59.
- [8] **Rajbala, (2010).** Improvement in nutritional status of school children through micronutrient rich dietary supplements. M.Sc. Thesis, CCS Haryana Agricultural University, Hisar.
- [9] **Rajbala, Sehgal, S. and Katwara, A. (2012).** Impact of nutritional education on the knowledge of mothers of

- school going children in district Sonapat, Haryana. *Food Sci. Res. J.*, 3(2): 172-174.
- [10] **Ramchandran, P. (2013)**. Food and nutrition security : Challenges in the new millennium. *Ind. J. Med. Res.* 138 : 373-382.
- [11] **Ramzan, M., Ali, I. and Khan, A.S. (2008)**. Body mass status of school children of Dera Ismail Khan, Pakistan. *J. Ayub. Med. Coll Abbottabad.* 20(4): 119-121.
- [12] **Sati, V. and Dahiya, S. (2012)**. Nutritional Assessment of Rural School-Going Children (7-9 Years) of Hisar District, Haryana. *Open Access Scientific Reports.* <http://dx.doi.org/10.4172/scientificreports.363>.
- [13] **Sharma, S.K., Mathur, G.P., Mathur, S., Singh, Y.D., Khushwaha, K.P., Prasad, V.N., Yadav N.R. and Saxena, S.P. (2007)**. Xerophthalmia in pre-school children. *Ind. pediatr.* 24: 645-650.
- [14] **Shukla, P., Sharma, R. and Bisht, K. (2008)**. Impact of nutrition garden and IEC training on nutritional status of farm families. *Asian J. Home Sci.* 3(1): 82-85.
- [15] **Variyam, J.N., Blaylock, J., Lin, B.N., Ralston, K. and Smallwood, D. (1999)**. Mother's nutrition knowledge and children's dietary intakes. *Am. J. Agri. Eco.* 81: 373-84.