Nutrition education among adolescent girls on recipes using dehydrated vegetables –Am impact study of video and Booklet.

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ABSTRACT;-Micronutrient deficiencies like anaemia are important nutritional disorders among adolescent girls in India and other developing counties. Vegetables, particularly the leafy ones, are known to be rich in these nutrients. Though produced in plenty when in season, their high perishability make their usage limited round the year. Dehydration of vegetables, one of the most popular and oldest method of preservation, is one of the important ways to make the vegetables available in all seasons. A booklet and a video film which have been produced under an ICAR project of the FN Deptt. A.A.I.-D.U. contain recipes incorporating dehydrated vegetables into several common recipes. This study was taken up to find out the impact of these two materials in teaching the recipes and their nutritional importance to rural adolescent girls. The specific objectives were (i) To find out the effectiveness of booklet alone in teaching recipes with dehydrated vegetables to rural adolescent girls and (ii) to find out the effectiveness of teaching recipes with dehydrated vegetables by a combination of booklet and video.

A total of 120 school girls aged between 13-18 years from Allahabad, U.P. were randomly selected as respondents. Out of these 40 formed the control to whom neither booklet was distributed nor the video CD was shown. The remaining 80 formed two experimental groups of 40 each (E1 and E2 respectively). After pre- exposure knowledge test, group E1 was exposed to booklet entitled. “Sukhi sabjiyon ke mulyvasrdhak vyanijan “ alone and the group E2 was exposed to a combination media of the booklet as well as a video film entitled “vividhahar- nigijalikrit sabjiyou se bane paushted vyarjan.” Post exposure knowledge was measured at two stages (i) For E1 group after 7 days and 30 days and (ii) For E2 group within 24 hours and 10 days. Knowledge gain of control group was deducted to find out actual gain of experimental groups. The E1 group (booklet alone) showed a significant knowledge gain of 65.39 percent at post exposure I and 65.73 percent at post exposure stage II. Similarly the E2 group showed significant improvement with 74.65 percent and 76.85 percent at 1st and 2nd post exposure stages respectively. The actual gain in knowledge was 31 percent in E1 group and 36.78 percent in E2 group. The booklet “Sukhi sabjiyon ke mulyrardhak vyanjan” and video film” vividhahar nirjalikrit sabjuyon se bane paushtik vyanjan” have been thus found to be very effective in teaching recipes incorporating dehydrated vegetables to rural adolescent girls. However combination of the two education material is more effective than the booklet alone.

INTRODUCTION

Nutrition education has been defined as educational measures for inducing desirable behavioural changes for the ultimate improvement in the nutritional status of all nutrition intervention programmes. The importance of nutrition education as a means for improving the health and nutrition of community in the developing countries has been increasingly realized during recent years. Lack of knowledge of the dietary requirements and the nutritive value of different foods is the main contributory cause for the widespread occurrence of many disease in developing countries. Nutrition education, which is practical and adopted to suit the socioeconomic conditions, food habits and local food resources, can tackle the problem to a great extent. Adolescent are one of the most important groups of any society because they have an influential effect of the future social economic and cultural status of society. Nutritionally, this age is very vulnerable because of double demand of growth and activity. So there is need to promote nutrition education. Micronutrient deficiencies like anaemia are important nutritional disorder among adolescent girls in Indian and other developing countries. Vegetables particularly the leafy ones,are known to be rich in these nutrients. Through produce in plenty when in season, their high perishability make their usage limited round the year. Dehydration or vegetables, one of the most popular and oldest method of preservation, is one of the important way to make the vegetables available in all seasons, thus supplying the important nutrient to our population group regularly. As mineral content is not lost during dehydration, dehydrated vegetables can

be utilized to enrich the various conventional food products.

Audio visual aids such as video film provide two channels to access to the mind through the ear and the eye. However in recent year a large population of adolescent girls are getting literate and therefore the print media (eg booklet) can be effectively used for supplementing the information imparted through several aids. The present study was planned with the following **objective:**-

(1) To find out the effectiveness of booklet alone in teaching recipes with dehydrated vegetables to rural adolescent girls.

(2) To find out the effectiveness of teaching recipes with dehydrated vegetables by a combination of booklet and video.

Materials and methods :

Allahabad district of Uttar Pradesh was selected for the study. Three villages from Kaudihar block of trans Ganga area were selected for survey. Three Government school from the three selected villages were chosen for the study. The total number of respondent selected were 120, out of whom 40 were in control group and the remaining 80 in two experimental groups of 40 each. All were adolescent girls studying in the schools. One experimental group was for education through printed media i.e. booklet and the other experimental group was for exposing to a combination media of booklet and video.

For data collection a structure schedule and knowledge test proforma were developed. The schedule consist of thee parts viz (i) General profile (ii) dietary survey and (iii) knowledge test. Knowledge test proforma was prepared to find out the knowledge level of respondents before and after the nutrition education. A set of multiple choice type questions were prepared. The questions were related to anaemia, vitamin-A deficiency and recipes prepared from dehydrated green leafy and yellow/orange vegetables which were printed in the booklet as well as in the video film also. The test was used for both the experimental and control group. On account of the wide variation in the scores obtained by the subjects, the knowledge level was divided into three categories, viz, 'low', medium and 'high'. Accordingly the number of the respondents obtained the scores falling in different categories were earmarked as follows :

0-33% = low

34-66% =medium

67-100%=high

A video film and a booklet entitled "vividhahar-nigijalikrit sabjiyou se bane paushted ryanifan' and "sukhi sabjugon be mulyarasrdhak rynaijan" respectively, containing recipes incorporated with dehydrated vegetables were used for importing nutrition education to adolescent girls. After exposing adolescent girls to educational tools i.e. booklet and video film, the knowledge test was again conducted, using the same set of questions which was used at the pre-exposure level. The post exposure was done at two stages (i) Post exposure stage I and (ii) post exposure stage –II. The scores of pre and post exposure stages were compared and impact of the booklet alone and combination of booklet and video film on knowledge was studied by using the following formula.

Gain in knowledge = scores in post exposure – test-scores in pre exposure test.

Actual gain in knowledge = grain in knowledge of experimental group – gain in knowledge of control group.

Result and Discussion:-

General profile :

A very high proportion (95.83%) of adolescent girls belonged to Hindu religion whereas remaining belong to Muslim religion. Majority (87.5%) of the adolescent girls were from nuclear family. About 75 percent of the parents of adolescent girls were literate. The highest proportion

(45%) of the adolescent girls were from class 9th whereas remaining where from class 11th and 8th. The average family income per month of adolescent girls surveyed was Rs. 9000.00 with the range of Rs. 1000.00 to Rs. 17000.00 per capita income per month ranged between Rs. 100.00 to Rs. 2000.00 and had a mean value of Rs. 1050.00 vegetarians formed majority in all the groups.

Dietary surveyed :

The food consumed daily by all the subjects included (i) cereals (ii) Roots and tubes and (iii) fats and oils. The consumption of other foods groups varied from daily to never. Intake of all the nutrients in all the groups was comparatively less than the recommended dietary allowances (RDA) published by the ICAR, except for vitamin C and folic acid which exceeded the RDA in all the three groups. There was no significant difference with respect to intake of two nutrient i.e. protein and fat but there was significant difference in intake of other nutrients.

Impact of nutrition education through booklet and video film:-

It was observed that mean scores increased greatly at post exposure stages I and II when compared to pre exposures scores. It was 65.39 percent (table 1) in experimental group E_1 (given education through booklet alone) and 74.65 percent in experimental group E_2 (given education through combination media i.e. booklet video film) from the pre exposure mean of 33.16 percent and 28.82 percent respectively at post exposure stage I, and at post exposure stage II it further increases to 65.73 and 76.85 percent in experimental groups E_1 and E_2 respectively, whereas that of the control group it was 27.96 percent at pre exposure and at post exposure it was 29.62 percent. The gain in knowledge of experimental group E1 and E_2 were 32.24 percent and 45.83 percent respectively as against 1.64 percent of control group. The actual gain in knowledge in the experimental groups E_1 and E_2 were 30.60% percent and 44.19 percent respectively. When the 't' test was applied to find out whether the knowledge gain were significant it was revealed that the gain of both E_1 and E_2 were highly significant, the 't' calculated being 11.16 and 13.62 respectively. Similar to the finding of this study, Kumar et al. (2003) and Subba Rao et al. (2005) also reported significant knowledge gain of the respondents as a result of nutrition education. The proportion of adolescent girls in different knowledge categories at pre and post exposure stages I and II are shown in table 2.

Table 2: Knowledge level of Adolescent girls at pre, post exposure -I and post exposure –II stages of booklet and video film on recipes.

	Experimental group (n=80)																	
	Booklet alone (n=40)									Booklet and video (n=40)								
Knowledge (categories)	Pre exposure			Post exposure I			Post exposure II			Pre exposure			Post exposure I			Post exposure II		
	N	%	Mean % knowledge score	N	%	Mean % knowledge score	N	%	Mean % knowledge score	N	%	Mean % knowledge score	N	%	Mean % knowledge score	N	%	Mean % knowledge score
Low (0-33%)	23	57.5	23.14	-	-	-	-	-	-	27	67.5	22.0	-	-	-	-	-	-
Medium (34.66%)	16	40	44.97	22	55	58.41	24	60	55.62	13	32.5	42.98	17	42.5	50.86	15	51.75	51.60
High (67-100%)	1	2.5	75.61	18	45	79.70	16	40	76.67	-	-	-	23	57.5	80.37	25	58.35	81.51

Contd…

Table 2 contd.

Control group (m=40)						
Pre exposure				Post exposure I		
Knowledge (categories)	**N**	**%**	**Mean % knowledge score**	**N**	**%**	**Mean % knowledge score**
Low (0-33%)	14	65	21.50	28	70	25.47
Medium (34.66%)	26	35	50.57	11	27.5	39.79
High (67-100%)	-	-	-	1	2.5	67.56

Table 1 : Mean knowledge of adolescent girls at different stages of exposure to recipe booklet and video.

Groups	Mean knowledge scores						Gain (post- exposure I minus pre- exposure) *		Actual gain * (Experimental-control)
	Pre exposure		Post exposure I		Post exposure II		Out of 37	%	
	Out of 37	%	Out of 37	%	Out of 37	%			
Experimental group E1 (booklet)	12.26	33.16	24.19	65.39	24.32	65.73	11.93	32.2	30.60
Experimental group E2 (booklet + Video)	10.66	28.82	27.62	74.65	28.43	76.85	16.96	45.83	44.19
Control group	10.34	27.96	10.95	29.62	-	-	0.61	1.64	-

***For computing Actual gain, the gain of control was deducted from the gain of experimental groups at post exposure I stage only. Post exposure II was disregarded.**

Conclusion : The video film and the booklet entitled 'vividhahar – nigijlikrit Sabjiyon se bave paushted vynijan" and "sukhi sabjiyon ke mulyavasrdhok vynaijan "respectively were found to be very effective in teaching recipes incorporating dehydrated. Vegetables to rural adolescent girls. A combination of two education material was more effective than booklet alone.

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References :

1) ICMR task for study 2001. {Prevalence of anaemia among adolescent girls. Indian Council of Medical Research, New Delhi.

2) Kumar A.R., Gupta, S. and Gupta, N. 2003. Production and impact study of vitamin A related video film for school children. Indian journal of nutrition and dietetics 40, 6 : 225-227.

3) Kumar, A.R., Yadav, N., Gupta, A.K., Parvin, K.,Tripathi, V., and verma, V., 2004. Influence of family's vegetable cultivation on prevalence of anaemia among adolescent girls. The Ind. J. Nutr. Dietet. 43:32-38.

4) Devdas, r.p. 2001. Nutrition network for Tamil Naidu and Kerla. 6:3.

5) Subbo, Rao GM and Co-worker. 2005. Impact fo FAO's global school based nutrition education initiative feeding minds, fighting hunger 9FMFH) on school children. The Ind. J. Nutr. Dietet, 42,98.