Stud Home Com Sci, 2(2): 99-102 (2008)
PRINT: ISSN 0973-7189 ONLINE: ISSN 2456-6780 DOI: 10.31901/24566780.2008/02.02.03

Efficacy of Nutrition Counselling on the Knowledge, Attitude and Practices of Working Women

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KEYWORDS Nutrition Counselling. Knowledge. Attitude. Practices

ABSTRACT Seventy working women aged between 35-45 yrs belonging to middle income group were selected randomly and divided equally into two groups - Experimental (E) and Control (C). Nutrition counselling (NC) was imparted to group E for a period of three months by nine individual and three group contacts through nutrition module, lectures, participatory, discussions, demonstrations etc. The subjects of group E were educated about various nutrient requirements, functions of different nutrients, nutritional disorders their control and prevention, meal planning and cooking practices etc. The evaluation of NC was done through a composite questionnaire by pretesting (T_1) and post testing (T_2) the nutrition knowledge, attitudes and practices (KAP) of the subjects. The data revealed that the gain in KAP scores were 3.96, 8.35, 1.61 and 0.95, 0.59, 0.22 in group E and C respectively. Further, the quantum of improvement in KAP in group E was 1.40, 1.57 and 1.14 times, while 1.09, 1.04 and 1.02 in group C at T_2. Adoption of desirable meal preparation and cooking practices also improved in group E. Results of the present study indicated that there was positive effect of NC in group E in terms of improvement in gain in scores and adoption of desirable eating pattern. It is suggested that there is great need of proper selection of foods in the daily dietaries which can be imparted by educating the women by changing their attitudes regarding nutrition and health through nutrition counselling and the interaction needs to be for longer duration i.e. minimum for six months to bring about desirable changes.

INTRODUCTION

Women of today, whether belonging to the affluent society or economically backward sectors constitute major portion of world's population. Workingwomen today constitute 22.7 per cent of total population in India as against 51.5 per cent of the male workers. Globally, women are projected to account 47 per cent of the labour force by the year 2005 (Harshala and Premakumari 2000). Women's health is of utmost importance as it reflects the health of family. In case of working women, dual stress of manual labour, conflicting demands of work in and outside the home and lack of enough time have been shown to have adverse effects on nutritional and health status of women (Jain and Singh 2003). It has been observed that print media (like modules, booklets) is a powerful medium for communicating information to the masses in written form. Since almost half of India's population is female and significant number of them are joining the work force, the need for detailed depiction of efficacy of nutrition counselling on the knowledge, attitude and practices is imperative. Keeping this point in view, the present study was undertaken.

MATERIALS AND METHODS

A sample of seventy working women (teachers) in the age group of 35-45 yrs from four schools of Kotkapura city (Punjab) belonging to middle income group were selected and equally divided into two groups viz. Experimental (E) and Control (C) during the year 2004. The subjects of group E were imparted nutrition counselling (NC) through modules, lectures, participatory demonstrations, visual aids etc. by nine individual and three group contacts for a period of three months. The evaluation of nutrition counselling was done through a composite questionnaire by pre and post test of knowledge, attitude and practices (KAP) of the subjects in group E and C. For each question of K and P that was answered correctly, a score of one was awarded. For the one that was answered wrongly or unanswered, a score of zero was given. Score of one half was given when the answer was partly correct. For evaluation of attitudes of women's favourable statement were scored - three for agree, two for disagree and one for undecided. Pre-tested questionnaire were administered to all the subjects at T_1, before the nutrition counselling was started. On the completion of NC, these were re adminis-

tered. This was done to find out the change in KAP of the subjects of both the groups as reflected by scores obtained on post tests. Gain in scores and quantum of improvement were calculated by following formulas.

Grain in scores = Post test score – Pre test score
Quantum of improvement = Post test score / Pre test score

RESULTS AND DISCUSSION

The demographic information of the subjects in the present study revealed that average per capita income in group E and group C was Rs. 2517±121.5 and Rs. 2243±109.2 respectively. The per capita income in India and Punjab was Rs. 1498.17 and Rs. 2137.68 respectively at current prices (Anonymous 2002), which indicated that the subjects of the present study had higher income. In group E, 37 per cent subjects were graduates and 63 per cent were post graduates, while in case of group C, the corresponding values were 43 and 57 per cent respectively. Literacy rate of females in India and Punjab was 54.16 and 63.55 per cent respectively (Anonymous 2004). Regarding the dietary habits, it was observed that 77 and 71% and 23 and 29% of subjects were vegetarian and non-vegetarian in-group E and C respectively. It was surprising to note that 54 and 60% of the subjects were in the habit of skipping one meal a day i.e. breakfast or lunch were the two meals skipped most frequently by a large number of subjects i.e. 53 and 62 per cent in both the groups respectively. Majority of the subjects were fond of eating out/buying ready-made foods like *samosa*, *petties*, *pakoras* etc. and the corresponding figures were 74 and 86 per cent in case of group E and C respectively.

Distribution of KAP Score

The distribution of KAP scores of the subjects is presented in Table 1. It was seen that majority of the subjects (57.14%) obtained knowledge scores between 10-15, followed by 37.14% subjects who obtained between 5-10, and only 2.86% per cent obtained between 15-20 at T_1 in group E, but at T_2, low scores moved towards higher scores i.e. 60% scored between 10-15, 11.43% scored between 15-20, and 25.17% scored between 5-10 in group E. The corresponding figures in case of group C were 74.29, 17.14 and 2.86 % at T_1 respectively and did not show any improvement at T_2 in-group C. Similar results have also been reported by Shoker (2003) as the mean scores for knowledge improved significantly($P \leq 0.01$) in post test from 11.02 to 11.087 in working women and 7.7 to 12.30 in non working women.

Regarding attitude scores, it was found that 57.14% subjects obtained 15-25 scores and 42.86% scored <15 in group E at T_1 but at T_2, there were 5.71% subjects who scored between 25-35 in group E. Further, the number of subjects who scored between 15-25 increased to 62.86% and who scored to <15 decreased to 31.43% in group E. The corresponding values in group C were 62.86 and 68.57% and 37.14 and 31.43% at T_1 and T_2 respectively. This indicated significant

Table 1: Distribution of KAP scores of respondents

Scores	*Group E (n=35)*				*Group C (n = 35)*			
	T_1		*T_2*		*T_1*		*T_2*	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Knowledge								
<5	1	2.86	1	2.86	2	5.71	2	5.71
5-10	13	37.14	9	25.71	6	17.14	6	22.86
10-15	20	57.14	21	60.00	26	74.29	25	68.57
15-20	1	2.86	4	11.43	1	2.86	2	2.86
Attitude								
<15	15	42.86	11	31.43	13	37.14	11	31.43
15-25	20	57.14	22	62.86	22	62.86	24	68.57
25-35	-	-	2	5.71	-	-	-	-
35-45	-	-	-	-	-	-	-	-
Practices								
<5	1	2.86	-	-	4	11.43	4	11.43
5-10	17	48.57	14	40.00	13	37.14	12	40.00
10-15	17	48.57	21	60.00	18	51.43	19	48.57

KAP - Knowledge, Attitude, Practices

(P≤0.01%) improvement in group E than group C. Fey et al (2002) too reported that there was an increase in the subjects which indicated more positive attitude towards nutrition after imparting nutrition counselling.

Improvement in practices of the subjects in group E was also observed at T_2. There were 2.86 and 0% subjects who scored <5, 48.57 and 40% who scored between 5-10 and 48.57 and 60% who scored between 10-15 at T_1 and T_2 respectively in group E, which indicated that some of the subjects had moved to upper category of the scores, whereas group C had poor scores of practices and the corresponding values were 11.43, 37.14 and 51.43 % and 11.43 , 40.00 % and 48.57% at T_1 and T_2 respectively. Similar to the findings of the present study. Grewal (2003) and Aggarwal (2003) showed aggregate improvement in KAP scores, dietary habits and cooking practices among the working women after nutrition counselling.

Table 2 depicted that the gain in KAP scores were 3.96, 8.35, 1.61 in reference to knowledge, attitude and practices respectively in group E, while in case of group C, gain in KAP scores were negligible i.e. 0.95, 0.59 and 0.22 respectively. The differences in gain of KAP scores were highly significant (P≤0.01) in case of group E, while non-significant in case of group C. It was found that the quantum of improvement in knowledge, attitude and practices was 1.40, 1.57 and 1.14 times, which signified that NC imparted to group E resulted in significant (P≤0.01) improvement. Aggarwal (2003) too reported that quantum of improvement in respect to knowledge was 1 to3 times among majority of the subjects.

Adoption of Desirable Practices

To evaluate the extent of adoption of desirable nutritional practices, individual contacts and observations through home visits were made. The subjects were taught about the useful tips and right methods of preparation and cooking of food. Table 3 showed that the subjects of group E adopted several practices taught to them viz. washing vegetables before cutting (69%), utilizing water after soaking rice (54%), avoiding use of baking soda (49%), inclusion of raw fruits and vegetables in daily diets (83%), inclusion of sprouted pulses (57%), use of unsifted flour (54%), avoiding heavy meals at dinner (69%), cooking in covered pan or pressure cooker (66%) at T_2. The present findings are inline with those of Grewal (2003) and Aggarwal (2003) who reported that the subjects adopted several practices taught to them during nutrition counselling sessions.

Impact of Nutrition Counselling on KAP

It was observed that knowledge about proper selection of foods, improved method of cooking and inclusion of nutritious foods in the diet has improved the nutritional health status of the subjects. At T_1, the subjects were in habit of consuming more refined foods, fried foods, snacks, sweet dishes etc. During NC sessions, the subjects of group E were taught that higher intake of these foods could lead to obesity which was a root cause of many diseases, like diabetes, coronary heart disease, hypertension, arthritis etc. Hence the subjects shifted to increased con-

Table 2: KAP scores obtained by subjects

Parameters	*Group E*					*Group C*				
	T_1	T_2	*t-value*	*Gain in scores*	*Quantum of improvement*	T_1	T_2	*t-value*	*Gain in scores*	*Quantum of improvement*
Knowledge	9.94± 2.69	13.90± 3.70	9.60***	3.96	1.40	10.44± 3.25	11.39± 3.14	1.023^{NS}	0.95	1.09
Attitude	14.54± 4.31	22.89± 4.21	7.64***	8.35	1.57	16.07± 5.34	16.66± 5.30	1.48^{NS}	0.59	1.04
Practices	11.06± 2.56	12.67± 2.45	2.98***	1.61	1.14	9.49± 2.64	9.71± 2.59	1.37^{NS}	0.22	1.02
Overall	33.7± 8.07	48.46± 8.46	-	14.76	1.44	35.85± 10.25	37.76± 6.95	-	1.91	1.05

***-Significant at 1%
NS - Non significant

Table 3: Adoption of desirable practices by the subjects

Practices	*Group E (n=35)*				*Group C (n = 35)*			
	T_1		*T_2*		*T_1*		*T_2*	
	*n**	*%*	*n**	*%*	*n**	*%*	*n**	*%*
Washing vegetables before cutting	15	43	24	69	13	37	15	43
Utilizing water after soaking rice	11	31	19	54	15	43	15	43
Avoiding use of soda in cooking	9	26	17	49	11	31	11	31
Including raw fruits and vegetables in diet	16	46	29	83	19	54	19	54
Including sprouted pulses	12	34	20	57	11	31	13	37
Using unsieved flour	14	40	19	54	18	51	18	51
Avoiding heavy meals at dinner	15	43	24	69	12	34	12	34
Cooking in covered pan or pressure cooker	19	54	23	66	21	60	23	66

* Multiple response

sumption of low calorie, nutritious, fibrous foods, sprouted pulses, fermented foods, GLV's, fruits etc. This lead to the weight reduction (2.08 kg) among the subjects of group E in a span of three months at T_2 as the subjects were overweight. Moreover there was change in their life style pattern as they had increased physical activity through morning or evening walks, exercise, Yoga etc. at T_2 which resulted in improved morbidity status, diminished their laziness and the subjects felt energetic, physically active and happier. Outram et al (2002) showed an aggregate improvement in all food groups and positive change in dietary intake and food behaviour was also observed after imparting nutrition counselling.

All the subjects of group E had well adopted the desirable food preparations and right cooking practices at T_2 as they were taught about the losses of nutrients (Vitamin-B-complex, Vitamin C etc.) due to reheating, overcooking, cooking in open pan, soaking rice for too long and throwing the soaked water, sifting of flour, using baking soda in cooking whole pulses etc. It was further observed that at T_1 the subjects quite oftenly preferred to take fast foods from school canteen, but at T_2 the subjects preferred to take meals at home instead of eating meals outside or buying readymade foods.

As economic empowerment of women might help in improving their health status, but it can not work alone. So, there is need to educate and create awareness among women about health, balanced diet, nutritional requirements, deficiency diseases etc. through NC sessions so that they can attain maximum health potential in their lives. The nutrition counselling programme at community level should be multiprolonged and the interaction with the subjects needs to be for longer time i.e. minimum for six months to bring about desirable changes. Developed module can be translated in different regional languages and can be widely used for educating rural and urban women.

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