

Effect of Nutrition Education Program on Dietary Eating Patterns of Adolescent Girls (16-19 Years)

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ABSTRACT

Nutritional problem in adolescent age is common throughout India. Occurrence of nutritional problems like anaemia, protein energy malnutrition (PEM), ricket may develop due to lack of knowledge and awareness. Poor knowledge on nutrition among adolescent can lead to unhealthy eating practices and an unhealthy community. The purpose of this study was to conduct Nutrition Education Program (NEP) among adolescent girls, and to assess their dietary intakes. 300 adolescent girls were selected through purposive random sampling. Nutrition education was imparted through audio-visual aids for three months in college settings. Before and after imparting nutrition education, the changes in eating patterns were evaluated by questionnaire method. The study showed that dietary intakes for energy and fats were more than adequacy, while protein and iron consumption was more according to comparison with RDA. A significant improvement in their nutritional knowledge was observed after giving Nutritional Education Programme.

Keywords: Adolescent girls, Dietary patterns, Nutrition Education Program

INTRODUCTION

The last three decades have witnessed tremendous changes in the eating patterns of Indian population. There has been revolution in the adolescent's lifestyle and eating pattern which has largely attributed to the changes in normal health. Trends in adolescent's eating pattern shows a great concern with regard to prevalence of adolescent's eating obesity and increasing recognition of the contribution of diet to long term health⁶.

The development of healthy eating habits is important as the rapid physical growth in adolescence is associated with increased nutritional needs. Various studies on diet and nutrition intake of adolescents and young adults in the developed world have shown that their diets are often high in fats and refined carbohydrate. Adolescence is also a period of increased vulnerability to obesity. Lack of physical activity and outdoor sports, along with the consumption of fat-rich 'junk' foods, is the major cause of obesity among the affluent population¹.

Consumption of diet high in sugar, saturated fat, salt, and calorie content in children can lead to early development of obesity, hypertension, dyslipidaemia, and impaired glucose tolerance⁸.

Some dietary patterns appear quite common among adolescents, to mention a few: snacking, usually on energy-dense foods; meal skipping, particularly breakfast, or irregular meals; wide use of fast food; and low consumption of fruits and vegetables. Patterns of nutritional behaviours shaped in childhood and during the period of adolescents are mostly continued in adult life, and on these patterns, to a great degree, depends the risk of development of many chronic diseases⁴.

The transition from adolescence to adulthood is an important period for establishing behavioural patterns that affect long-term health and chronic disease risk⁷.

Health and nutrition are known to be closely related. Nutrition can have an effect on one's health either by improving it, or making it deteriorate, likewise health can also affect nutrition by either improving the individual's appetite or making it deteriorate.

The leading causes of mortality and disease burden include risk factors for communicable, maternal, perinatal and nutritional conditions such as under nutrition. They also include risk factors for non communicable diseases and injuries such as high blood pressure and cholesterol, smoking, alcohol use and overweight and obesity which affect most regions⁵.

MATERIALS AND METHODS

Sample size - 300 adolescent girls (16-19 years)

Tools and techniques -

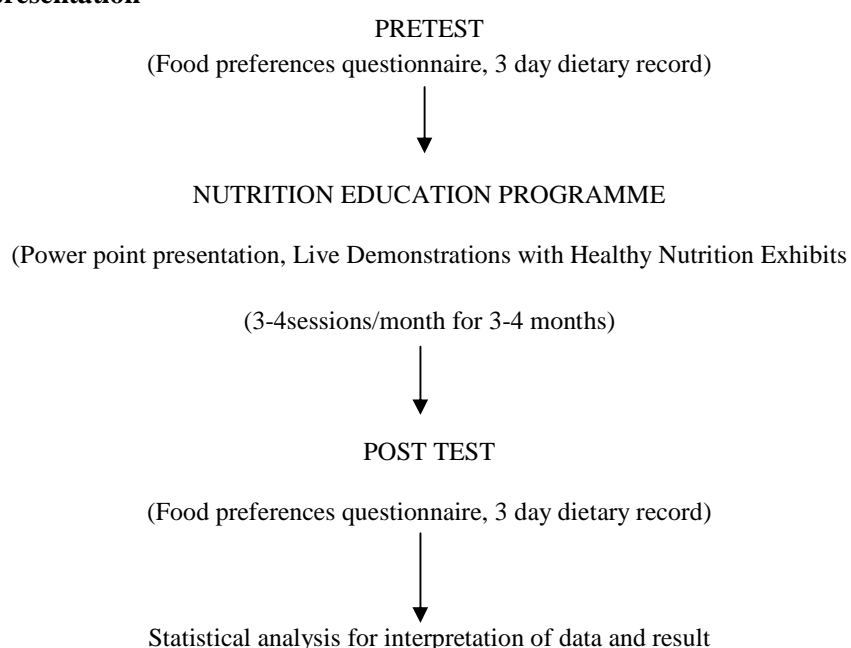
A. Schedules-

- 1) Food preferences Questionnaire
- 2) Impact of Nutrition Education Program (NEP) Questionnaire

B. Nutrition Education Program (NEP)

- 1) Large Group Counselling
- 2) Live Demonstrations with Healthy Nutrition Exhibits

Schematic Representation



RESULTS AND DISCUSSION

Out of 300 subjects 30 adolescent girls were pooled for the statistical analysis (t-test) using SPSS package. The 30 subjects belonged to 16, 17 and 18 years of age.

Frank and Wien in 2010 stated that although concerns had risen regarding environmental exposure along with childhood obesity and adult co-morbidities, there were no formal expert recommendations. Currently one of the most important factors underlying obesity as an epidemic were coupled with increase energy intake with limited energy expenditure.

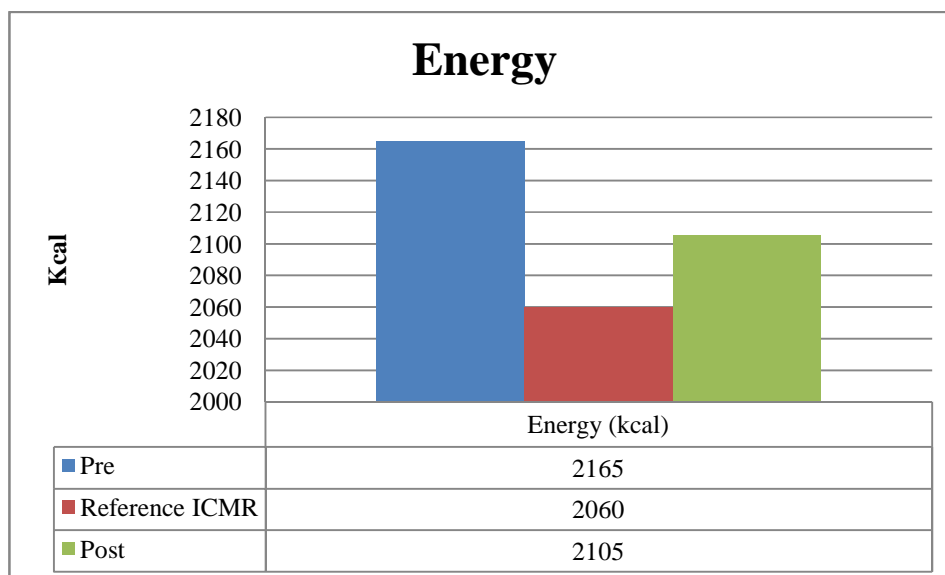
Nidhi *et al.*, reviewed in their study that high total fat and saturated fatty acid (SFA) intake and with a low intake of monounsaturated fatty acid (MUFAs) and omega 3 (polyunsaturated fatty acid) showed imbalanced nutrition which could be responsible for increasing the prevalence of obesity and insulin resistance in urban Asian Indian adolescents and young adults.

Table 1: T- test for nutrient intake of adolescent girls

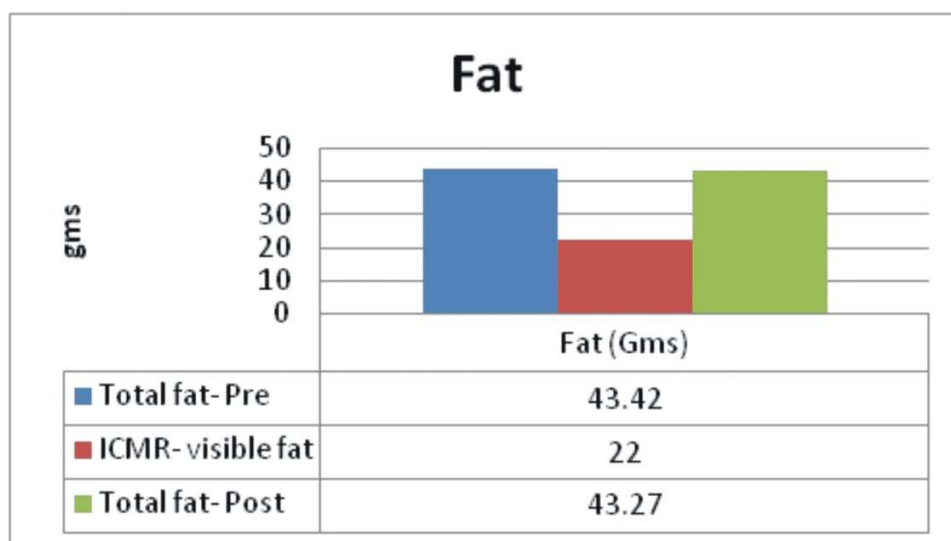
		MEAN	N	STANDARD DEVIATION	SIG.(2 tailed)
ENERGY (kcal)	PRE	2165	30	239.00643	0.114
	POST	2105	30	59.30956	
FAT (gms)	PRE	43.4267	30	5.59083	0.797
	POST	43.2789	30	3.87457	
PROTEIN (gms)	PRE	47.5289	30	5.09131	0.00**
	POST	53.6744	30	3.12516	
IRON (mg)	PRE	21.4467	30	2.98503	0.00**
	POST	24.8122	30	2.04496	

Energy:

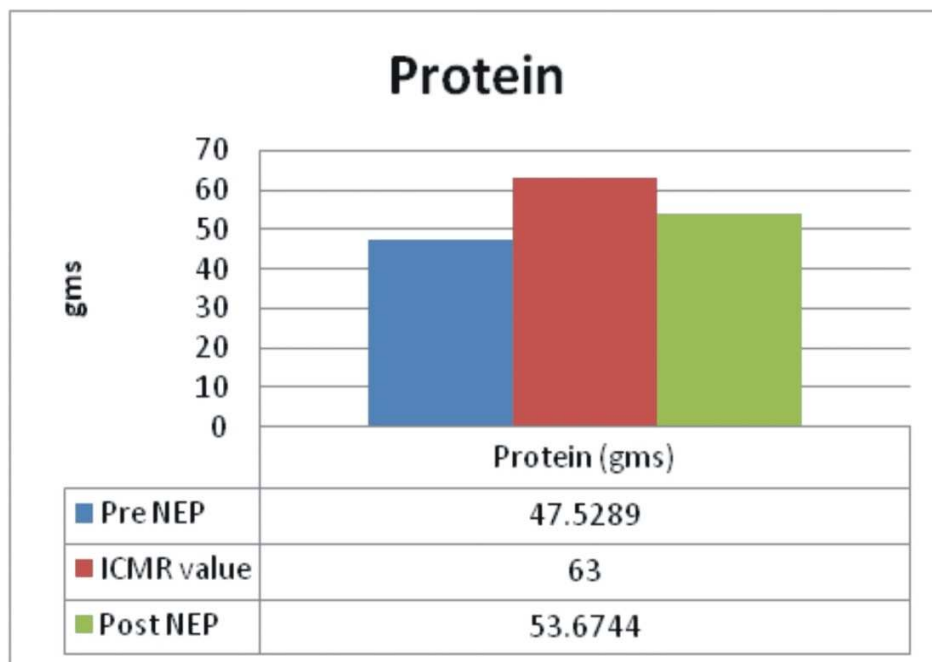
Graph 1.a Comparison of Energy between PRE NEP, POST NEP and ICMR cut off values



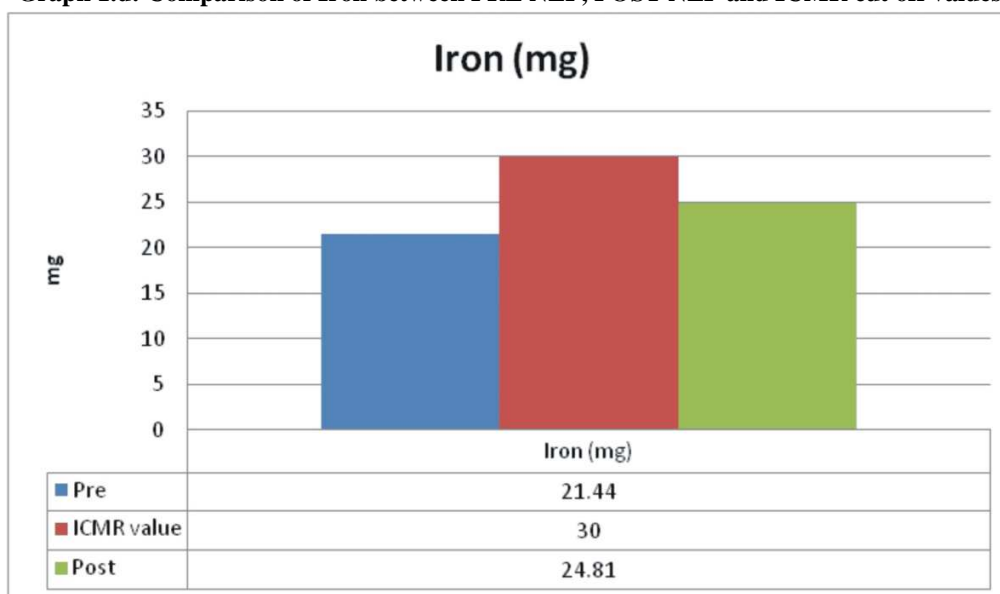
Graph no 1.a depicts the comparison of the energy (kcal) intake PRE NEP, POST NEP and ICMR cut off. According to the graph the mean Energy consumption of the adolescent girls before NEP was (2165±239.00) and mean value POST NEP was (2105±59.30) which indicated that there was reduction in energy consumption after NEP, however the consumption was marginally increased as compared to the ICMR cut off value. Further, ($p>0.05$) (0.114) which stated that the difference was non significant.

Fat:**Graph 1.b Comparison of Fat between PRE NEP, POST NEP and ICMR cut off values**

ICMR recommends the visible fat to be consumed per day but during calculations of the dietary record total fat was calculated. According to the graph 1.b, mean value of total fat (gms) was (43.42 ± 5.59) before NEP and POST NEP the mean value observed was (43.27 ± 3.87) and $(p > 0.05)$ which is 0.797. Thus result showed a non significant difference during the session.

Protein:**Graph 1.c: Comparison of Protein between PRE NEP, POST NEP and ICMR cut off values**

The recommended ICMR value of protein by adolescent girls is 63 gms /day. The mean value of protein before NEP was (47.27 ± 3.87) and POST NEP the mean protein value was (53.67 ± 3.12) which showed that after NEP the consumption of protein increased significantly and $(P < 0.05)$ (0.00), thus indicated that the difference was highly significant.

Iron:**Graph 1.d: Comparison of Iron between PRE NEP, POST NEP and ICMR cut off values**

Graph no. 1.d depicts the comparison between PRE and POST NEP Iron consumption of the adolescent girls. PRE NEP the mean Iron (mg) consumption was (21.44±2.98) and POST NEP the mean consumption was (24.81±2.044) which indicated that the consumption of Iron through diet increased positively. ($P < 0.05$) (0.00) which means that that the difference is highly significant.

Helen (2008), in her reviewed article on “Gendered dimensions of obesity in childhood and adolescents”, documented that difference between males and females in exposure and vulnerability to obesogenic environments, the consequences of child and adolescent obesity and their responses to interventions for this condition.

CONCLUSION

In this study it was demonstrated that the energy (kcal) consumption was more pre test which significantly reduced post test, further fat (gms) consumption was also observed to be more pre test but reduced post test. Protein (gms) and Iron (mg) consumption increased significantly and showed highly significant result ($p < 0.05$).

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