

Health And Well Being Of Adolescent Girls

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ABSTRACT

Background

During the transition from childhood to adulthood, adolescents establish patterns of behavior and make lifestyle choices that affect both their current and future health. The adolescent girls were encouraged to eat a balanced diet. The present study was conducted to see the impact of Nutrition education on the dietary intake and health status of adolescent girls.

Design

The present study deals with 200 adolescent girls in the age group of 13-15 years from two Schools of district Yamunanagar. The subjects were equally divided into two groups--Experimental (E) and Control group (C). The respondents of group E were given nutrition education for a period of six months while the group C was not given any counseling for the same period.

Results

The dietary survey was conducted for three consecutive days by 24 hour recall method before and after counseling. The results of the study showed that the mean daily intake of cereals, pulses, green leafy vegetables, sugar and jaggery was inadequate in both the groups. The intake of roots and tubers, visible fat exceeded the recommended allowances. The prevalence of common ailments was more marked in group C when compared with group E after imparting counseling.

Conclusion

Young people's behaviors are influenced at the individual, peer, family, school, community, and societal levels. Because many sectors of society contribute to adolescent health, safety, and well-being, a collaborative effort that engages multiple partners is necessary. Such joint efforts can also help to promote a more comprehensive approach to addressing adolescent health—one that views each adolescent as a whole person, recognizing and drawing upon his or her assets and not just focusing on risks.

Keywords : Adolescents, food intake, fast food, lifestyle, physical activity

WHO identifies adolescence as the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to 19. It represents one of the critical transitions in the life span and is characterized by a tremendous pace in growth and change that is second only to infancy. Biological processes drive many aspects of this growth and development, with the onset of puberty marking the passage from childhood to adolescence. The biological determinants of adolescence are fairly universal; however, the duration and defining characteristics of this period may vary across time, cultures, and socioeconomic situations. This period has seen many changes over the past century namely the earlier onset of puberty, later age of marriage, urbanization, global communication, and changing sexual attitudes and behaviors. Healthy eating is a way of balancing the food you eat to keep your body strong, energized, and well nourished. When you eat well, you are taking good care of your body. Evidence shows that dietary quality declines from childhood to adolescence. The intake of fruit, vegetables, milk, and fruit juices decreases, whereas the intake of soft drinks increases during this time. Studies indicate that the food choices of adolescents are not consistent with the dietary guidelines and food intake tends to be low in fruit, vegetables, and calcium-rich foods and high in fat. Studies on adolescent food intake in different European countries showed a similar consumption of fat, particularly saturated fat and low fiber intake. Animal sources of protein represented about two-thirds of total protein intake among adolescent girls with a low intake of calcium and iron.

Selection of subjects

A sample of 200 adolescent girls of age between 13-15 years belonging to urban areas of Yamunanagar district were selected by random sampling technique and equally divided into two groups-- Experimental (E) and control group (C). The students were assembled in their classrooms. The objectives of the study as well as the questions in the questionnaire were explained to the students. Then the students were asked to fill in the questionnaire, which was self-administered. All the students attending the chosen classes at the time of collecting the data participated in the study and therefore there were no non-responders.

Dietary Survey

The instrument selected to measure the identified variables (dietary habits, lifestyle, and physical activities) is a structured, self-administered questionnaire. The questionnaire was divided into two parts: the first part relates to socio-demographic data including age, sex, and educational status of parents. Parent's level of education was defined as low (illiterate, those who can read, write, and have primary school education), middle (intermediate and secondary school education), and high (university education). The second part consists of different questions pertinent to

students' dietary habits and lifestyle. A complete record of the food intake of each subject was kept by 24 hour recall method for three consecutive days both before and after counseling for six months. Nutritive value of the diets was calculated with the help of the Nutritive value book. Information related to physical activity such as frequency of playing sports inside and outside the school and participation in physical education classes was obtained through self-reported questions.

Clinical Examination

The respondents were clinically examined for the nutrient deficiency symptoms with the help of a doctor. Nutrient deficiency symptoms of the respondents were assessed as per the method described by Jelliffe both at T₁ and T₂.

Morbidity status

Morbidity status was assessed through medical history and clinical examination. The respondents were asked if they had suffered from common illnesses like viral fever, malaria, diarrhoea, common cold and cough etc. during past six months both at T₁ and T₂.

Statistical Analysis

The results obtained were statistically analysed using student t-test, coefficient of correlation and chi-square (χ^2) test to see the impact of nutrition education on the dietary and health status of the adolescent girls.

Results & Discussion: The data in **Table 1** showed that mean intake of cereals by the respondents of E and C group before counseling (T₁) was 301±30.4 and 314±29.6 gm. and after counseling (T₂) was 310±21.3 and 323±16.8 gm. respectively. There was an increase in cereal consumption. The average daily intake of pulses by respondents of E and C group at T₁ was 36±21.3 and 40±26.4 gm. and T₂ was 41±18.7 and 39±23.2 gm. respectively. However, the intake of pulses was much below the RDA. The diet was deficient in the intake of green leafy vegetables in both the groups.

Table 1: Average daily food intake of the Adolescent girls

Foods (gm.)	Experimental group		Control group		RDA	t-value
	T ₁	T ₂	T ₁	T ₂		
Cereals	301±30.4	310±21.3	314±29.6	323±16.8	430	1.71 ^{NS}
Pulses	36±21.3	41±18.7	40±26.4	39±23.2	70	1.12 ^{NS}
Green leafy vegetables	35±28.1	48±13.8	38±19.2	39±20.1	75	2.97*
Roots & Tubers	50±15.2	75±21.2	67±23.4	69±27.4	75	0.21 ^{NS}
Other vegetables	44±26.4	53±19.2	46±22.5	49±24.9	75	1.28 ^{NS}
Fruits	55±22.6	71±21.6	67±21.9	68±26.5	30	1.31 ^{NS}
Milk & milk products	225±41.1	245±39.2	212±42.8	216±32.6	250	0.03 ^{NS}
Visible fat	42±4.6	46.8±3.5	42±7.5	43±7.3	25	2.76**
Sugar & Jaggery	25±7.9	36±6.2	29±8.2	33±6.4	30	4.32**

** significant ($p \leq 0.01$);* significant ($p \leq 0.05$);

NS- Non-significant

The consumption at T₁ being 35±28.1 and 38±19.2 in group E and C respectively. A significant ($p \leq 0.01$) increase in the consumption of green leafy vegetables was found in both the groups as they were easily available at low price during the months of March-April. The subjects did not meet the suggested intake of 100 gm. as per ICMR recommendations as most adolescent girls disliked green vegetables. A higher intake of roots and tubers, other vegetables, fruits and visible fat was observed in both the groups. The consumption of milk and milk products was marginally adequate in both the groups at T₁, the values being 225±41.1 and 212±42.8 gm. in group E and C respectively. The average intake of sugar and jaggery among respondents of E and C group at T₁ was 25±7.9 and 29±8.2 gm. and at T₂ was 36±6.2 and 33±6.4 gm. respectively.

Clinical signs of nutrient deficiencies:

The adolescent girls were observed for various clinical symptoms of diseases due to nutritional deficiencies as shown in **Table 2**. Paleness of skin was more pronounced in most of the respondents in both the groups. Pale conjunctiva was also observed in 46 percent of the subjects in group E at T₁ which decreased to 21 percent at T₂.

Angular stomatitis, which is a sign of B-complex deficiency, was observed in only 10 percent and 6 percent respondents in E and C groups respectively. The condition remained the same for group C during the entire study period but none of the respondents in group E showed these signs at T₂. Dental caries were observed in 58 and 45 percent of subjects in E and C groups respectively. Irregular brushing of teeth, poor oral hygiene and excessive eating of sweets were the possible reasons for high incidence of dental caries in both E and C groups. But the carious lesions decreased to 10 percent in group E at T₂ though the rate of formation of caries remained the same in the case of group C at T₂. The data collected showed that the clinical signs of nutritional deficiency diseases were more marked in group C as compared to Group E at T₂ showing positive effect of counseling.

Table 2: Clinical symptoms of nutritional deficiencies in Adolescent girls

	Experimental group				Control group			
	T ₁		T ₂		T ₁		T ₂	
Clinical signs	N	%	N	%	N	%	N	%
Pale conjunctiva	46	46	21	21	30	30	28	28
Pale Skin	15	15	6	6	18	18	16	16
Angular Stomatitis	10	10	-	-	6	6	6	6
Mottled Enamel	28	28	7	7	12	12	12	12
Dental Caries	58	58	10	10	45	45	43	43
Fatigue	40	40	3	3	15	15	15	15
Anorexia	17	17	4	4	8	8	8	8

Morbidity status of the respondents

Morbidity status of respondents is presented in **Table 3**. Measles had the maximum prevalence among subjects belonging to group E while Viral fever had highest prevalence in group C at T₁. Common cold was observed in 31% and 15% in subjects belonging to group E and group C respectively. Diarrhoea was found in 19% and 28% in subjects belonging to group E and C respectively. Typhoid was also present in a number of respondents. Prevalence of common diseases like common cold and cough, diarrhoea, measles, chicken pox, typhoid showed a marked decrease in respondents of group E at T₂.

Table 3: Morbidity status of the Adolescent girls before and after counseling

Experimental group					Control group			
T ₁			T ₂			T ₁		
Diseases	Number of subjects	%	Number of subjects	%	Number of subjects	%	Number of subjects	%
Viral fever	20	20	19	19	31	31	30	30
Malaria	26	26	25	25	16	16	15	15
Diarrhoea	19	19	9	9	28	28	27	27
Common cold and cough	31	31	11	11	15	15	15	15
Measles	42	42	8	8	13	13	12	12
Chicken Pox	11	11	1	1	9	9	9	9
Typhoid	15	15	2	2	10	10	9	9

Conclusion

The result obtained from this study showed that the diets consumed by the subjects in both the experimental and control groups were deficient in cereals, pulses, green leafy vegetables but were high in fats, sugar and jaggery as compared to ICMR recommendations. The adolescent girls had faulty food habits. An improvement in the health and nutritional status of the subjects in group E as compared to group C at the end of the study clearly shows the beneficial effect of nutrition education on the health and nutritional status of adolescent girls. Nutrition education should be imparted to the mothers as well as the adolescent girls to increase the consumption of cheap and nutritious foods like sprouts, sugarcane juice, green leafy vegetables, jaggery, fermented foods and roasted grams in their daily diet. Environmental factors such as family, peer group, school, and community characteristics also contribute to adolescents' health and risk behaviors. As many sectors of society contribute to adolescent health, safety, and well-being, a collaborative effort that engages multiple partners is necessary-one that views each adolescent as a whole person, recognizing and drawing upon his or her assets and not just focusing on risks. To have the most positive impact on adolescent health, government agencies, community organizations, schools, and other community members must work together in a comprehensive approach. Providing safe and nurturing environments for our nation's youth can help ensure that adolescents will be healthy and productive members of society.

Ethical Consideration-Permission to conduct this research was obtained from the Principals of the schools, teachers, and students before conducting the study. Parents were informed about the study through the schools.

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