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Impact of nutrition education programme on knowledge, attitude and practice (KAP) about nutrition among adolescent girls

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Abstract

Background: Adolescents constitute about 243 million of population in India (UNICEF, 2016). Adolescent girls are considered to be a nutritionally vulnerable segment of the population. The objective of the study was to screen malnourished adolescent girls from the selected area and to assess the impact of nutrition education programme on nutritional status of the selected subjects.

Methods and Materials: A total number of 1300 school going adolescent girls (13-17 years) were randomly selected for the study from 10 different schools. Study was conducted in Puttaparthi Mandal of Anantapur District. Anthropometric profile and socio-economic status of the subjects was collected using a pre-designed and pre-tested questionnaire. Knowledge, attitude and practice (KAP) questionnaire was used to assess the impact of nutrition education programme in changing the dietary behaviour of the subjects. The data analysis was carried out using the Statistical Package for Social Sciences (SPSS) Software.

Results: In the present study, the prevalence rates of overweight and obesity were found to be 12.1 and 2.7 percent, respectively. About 22.5 percent subjects were suffering from thinness and 5.8 percent of them fell under severe thinness category. In experimental group, post-intervention results indicated a significant ($p < 0.01$) improvement in Knowledge, Attitude and Practice (KAP) scores when compared with control group. In experimental group, the gain in practice scores (10.28) was found to highest, followed by knowledge scores (10.24) and attitude scores (9.12).

Conclusions: There is a greater need to improve the nutritional status of adolescents improving overall nutritional status of adolescent girls employing a multisectorial community-based approach.

Keywords: Nutrition education, dietary behaviour, adolescent girls, knowledge, attitude and practice (KAP)

1. Introduction

Adolescents are considered to be a nutritionally vulnerable segment of the population. Adolescence is a period of great turbulence as puberty spurt, rapid physical growth and psychological development takes place during this phase and therefore nutritional requirements are enhanced throughout this period. Poor nutritional status during adolescence is an important determinant of health outcomes at the later stage of life. Socio-economic status, heredity, sedentary life-style pattern, faulty dietary habits, environmental condition etc., also affect adolescents' nutritional status to a great extent. The prevalence rates of non-communicable diseases such as obesity, hypertension, cardiovascular risk, underweight, eating disorders, emotional distress, other behavioural problems etc., are progressively increasing in developed as well as developing countries.

The health and nutritional status of the adolescents, is an index of its future manpower. Appropriate nutrition and dietary behaviour are important during adolescence to achieve growth potential to promote health and well-being and to reduce the risk of chronic diseases in adulthood. The growth and prosperity of a nation depend on the nutritional status and development of adolescent girls. Health and nutritional status of girls will further affect the health and survival of the future generation. So, the present study is a small attempt to assess the nutritional status and impart nutrition education among adolescent girls in Puttaparthi Mandal of Anantapur District with the hope to eradicate malnutrition among adolescent girls, the vulnerable population.

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2. Materials and Methods

An experimental intervention study was conducted among 1300 school going adolescent girls (13-17 years) in Puttaparthi Mandal of Anantapur District. Subjects were randomly selected for the study from 10 different government and private schools. Anthropometric profile and socio-economic status of the subjects was collected using a pre-designed and pre-tested questionnaire. Knowledge, Attitude and Practice (KAP) questionnaire was used to assess the impact of nutrition education programme in changing the dietary behaviour of the subjects. nutrition education was imparted for a period of six weeks i.e. 1½ months. Different nutritional concepts such as function of foods, classification of foods, basic nutrients & its health benefits, food guide pyramid, balanced diet, Healthy eating for an active lifestyle and nutritional needs of adolescent girls, were taught to the selected subjects.

The data analysis was carried out using the Statistical Package for Social Sciences (SPSS) Software. The mean values and standard deviation along with p-values were calculated for all parameters and tabulated. Statistical analysis using paired 't' test was done to compare and see weather significant change is present in between the groups.

3. Results and Discussion

In the present study of 1300 adolescent girls, 23.2 percent

belonged to 13 years, 20 percent belonged to 14 years, 17 percent belonged to 15 years, 19 percent belonged to 16 years and 20.8 percent belonged to 17 years of age. Table 1 represents age wise distribution of the subjects.

Table 1: Age-wise Distribution of the Subjects

S. No.	Age	N	%
1.	13 years	301	23.2
2.	14 years	260	20
3.	15 years	220	17
4.	16 years	249	19
5.	17 years	270	20.8
Total		1300	100

Among 13 and 14 years age group, the mean weight was found to be lower, when compared with ICMR standards. A progressive increment in the weight was observed among 15, 16 and 17 years of adolescent girls (Table 2). The mean BMI among 16 and 17 years age group was found to be higher than normal when compared with other age groups. Majority of the subjects (56.9 percent) showed normal BMI (Table 3). About 22.5 percent subjects were suffering from thinness and 5.8 percent of them fell under severe thinness category. The prevalence rates of overweight and obesity were found to be 12.1 and 2.7 percent, respectively.

Table 2: Mean Weight and Height of the Subjects according to their Age

Measurements	Age Of The Subjects					p value
	13 Years (N=271)	14 Years (N=263)	15 Years (N=251)	16 Years (N=255)	17 Years (N=260)	
	MEAN ± SD*	MEAN ± SD*	MEAN ± SD*	MEAN ± SD*	MEAN ± SD*	
Weight (Kg)	31.2 ± 3.25	35.4 ± 2.8	40.5 ± 1.9	49.8 ± 1.34	58.5 ± 4.73	0.000*
Height (Cm)	132.2 ± 2.88	139.8 ± 2.76	142.5 ± 3.7	146.9 ± 3.45	149.2 ± 4.53	0.000*
Body Mass Index (Bmi) [Kg/M ²]	17.9 ± 1.36	18.2 ± 1.33	20.0 ± 1.16	23.18 ± 1.61	26.44 ± 2.36	0.000*

Values are mean ± SD of number of subjects under each group. *Significant at $p < 0.01$ level.

Table 3: Nutritional Grades of the Subjects based on BMI

S. No	Bmi For Age (Who Z- Score)	Age of The Respondents										Total	
		13 Years		14 Years		15 Years		16 Years		17 Years		N	%
		N	%	N	%	N	%	N	%	N	%		
1.	Severe Thinness	42	15.5	26	9.9	5	2	2	0.8	1	0.4	76	5.8
2.	Thinness	129	47.6	114	43.3	44	17.5	4	1.6	1	0.4	292	22.5
3.	Normal	98	36.2	117	44.5	192	76.5	153	60	180	69.2	740	56.9
4.	Overweight	2	0.7	6	2.3	10	4	75	29.4	64	24.6	157	12.1
5.	Obesity	-	-	-	-	-	-	21	8.2	14	5.4	35	2.7
Total		271	100	263	100	251	100	255	100	260	100	1300	100

Among all the age groups, majority of adolescent girls from 13 and 14 years were suffering from thinness and severe thinness when compared with other age groups. Whereas, the prevalence rates of overweight and obesity were observed highest among 16 and 17 years when compared with other age groups.

The present study is consistent with the study conducted by Bharthi *et al.*, (2017) ^[1], which revealed that the prevalence of severe thinness, moderate thinness, mild thinness and overweight were found to be 18.35, 19.32, 2.72 and 1.69 percent, respectively among adolescent girls of Andhra Pradesh. Another study conducted by Gowda *et al.*, (2018) ^[2]

reported the prevalence rates of Thinness (28.6 percent) and stunting (22.9 percent) among adolescent girls of Andhra Pradesh, which is relatively higher when compared with the present study.

3.1 Nutrition Knowledge Scores

Table 4 depicts the impact of nutrition education programme on Knowledge, Attitude and Practice (KAP) scores regarding nutrition among the subjects. In experimental group, post-intervention results indicated a significant ($p < 0.01$) improvement in Knowledge, Attitude and Practice (KAP) scores when compared with control group (figure 1).

Table 4: Impact of Nutrition Education Intervention on KAP Scores of Nutrition among the Respondents (N=700)

Details	Control Group (N=350)					Experimental Group (N= 350)				
	MEAN \pm SD		Gain in scores	Quantum of Improvement	't'- Value	MEAN \pm SD		Gain in scores	Quantum of Improvement	't'- Value
	Pre Test	Post Test				Pre Test	Post Test			
Knowledge	11.93 \pm 0.2	12.4 \pm 1.5	0.47	1.039	0.05	11.46 \pm 0.3	21.7 \pm 1.3	10.24	1.893	2.4*
Attitude	11.56 \pm 1.1	12.1 \pm 0.4	0.54	1.046	1.2	11.37 \pm 1.2	20.42 \pm 0.8	9.12	1.796	1.9*
Practice	9.71 \pm 0.5	9.93 \pm 1.3	0.22	1.022	0.12	9.54 \pm 0.3	19.82 \pm 0.9	10.28	2.077	4.6**

Values are mean \pm SD of number of subjects under each group.

*Significant at $p < 0.05$ level.

**Significant at $p < 0.01$ level.

In experimental group, the gain in knowledge, attitude and practice scores were found to be higher (10.24, 9.12 and 10.28, respectively) when compared with KAP scores in

control group. Quantum of improvement was found to be highest in practice scores (2.077), followed by knowledge scores (1.893) and attitude scores (1.796)

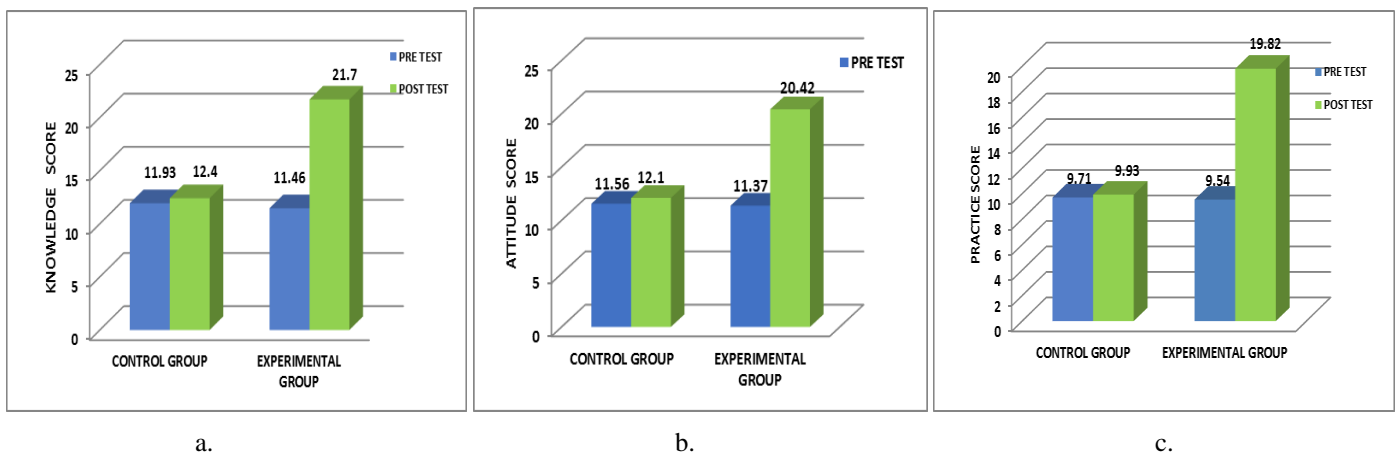


Fig 1: Knowledge (a), Attitude (b) and Practice (c) [KAP] Scores obtained by the subjects before and after Nutrition Education Intervention

Kaur *et al.*, (2007) [4], conducted a study among adolescent girls, which revealed a significant ($p < 0.01$) increase in nutritional knowledge scores from 11.17 to 19.16. The gain in the nutrition knowledge score was found to be 7.99 and the quantum of improvement in knowledge score was found to be 1.71 times. Another study conducted by Naghashpour *et al.*, (2014) [5] revealed increment in the Knowledge, Attitude and Practice (KAP) scores, which were found to be 1.7, 2.9 and 1.2, respectively.

Rao *et al.*, (2007) [6] revealed a significant ($p < 0.001$) improvement in the mean scores from 46.7 to 58.8 percent after nutrition education intervention. Another study conducted by Gupta and Kochar (2009) [3] Post intervention data revealed increment in the mean knowledge scores, which were increased from 12.41 to 19.92. The gain in the knowledge about nutrition education score was found to be 7.51 and the quantum of improvement in knowledge score was found to be 1.605 times.

4. Conclusion

In the present study, about 22.5 percent subjects were suffering from thinness and 5.8 percent of them fell under severe thinness category. The prevalence rates of overweight and obesity were found to be 12.1 and 2.7 percent, respectively. Post-intervention results revealed a significant ($p < 0.01$) improvement in Knowledge, Attitude and Practice (KAP) scores when compared with control group. Hence, Nutrition education was an extremely effective tool in elevating nutritional knowledge of the subjects and enhancing nutritional status.

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