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A study on the eating habits of adolescents in Thiruvananthapuram City, Kerala

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Abstract
Today, adolescents are more independent and have their own food decisions and choices. Many adolescents experience a progressive development and this will gradually augment in frequent appetite. They also need healthy foods to meet their growth demands. Adolescents are prone to eat more meals away from home than their younger siblings. The choice and timing of the meal, will be purely based on their convenience. Maintaining good nutrition throughout a child's teenage years is fundamental for their health and wellbeing. To maintain healthy balance, adolescents, should practice eating regular meals, engage in doing compulsory daily physical activity, and eating a wide variety of foods.
Objective: The present study aims to find out the present dietary habits of adolescents and their socio-economic background in Thiruvananthapuram district of Kerala, India.
Method: Three hundred adolescents in the age group of 13-15 years(middle adolescents) studying in the eighth and ninth classes of various schools in Thiruvananthapuram city of Kerala state were randomly selected using stratified random sampling method. A detailed and structured questionnaire, a food habit and three separate checklist for assessing the knowledge, attitude and practice on eating habits were used for the study.
Result and Discussion: The obtained data were statistically analysed using SPSS 16.0. From the study, it was found that the prevalence of under weight was found to be common among the adolescents irrespective of gender. The result also throws light on the emergency to address the health status of adolescents.

Keywords: Adolescents, eating habits, socio-economic background

Introduction
Adolescence is a period when peer group can influence the teenage eating behavior and it is during this period onwards that, an individual may likely to start skipping meals or possibly under-eating or over-eating. Today, adolescents are more independent and have their own food decisions and choices. Many adolescents experience a progressive development and this will gradually augment in frequent appetite. They also need healthy foods to meet their growth demands. Adolescents are prone to eat more meals away from home than their younger siblings. The choice and timing of the meal, will be purely based on their convenience, and this may lead to many wrong decision making in the types of food they prefer (for example, soft drinks, fast-food, processed foods). Maintaining good nutrition throughout a child's teenage years is fundamental for their health and wellbeing[6]. To maintain healthy balance, adolescents, should practice eating regular meals, engage in doing compulsory daily physical activity, and eating a wide variety of foods.

Food choices of adolescents have become increasingly unhealthy placing them at increased risk of malnutrition and chronic diseases in the future. Thus, dietary decisions made in adolescence may have long term health implications. Awareness on healthy eating habits will definitely make the adolescents aware about their health and its importance in future living. Teachers and parents can play a major role in bringing a positive and healthy change in the eating pattern of the adolescents.

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Objectives of the study
The study aims to find out the present dietary habits of adolescents and their socio-economic background.

Methodology
Locale and sample for the study
Three hundred adolescents in the age group of 13-15 years(middle adolescents) studying in the eighth and ninth classes of various schools in Thiruvananthapuram city of Kerala state were randomly selected using stratified random sampling method. Equal considerations were given to both the genders and both government and private schools were also selected.

Materials and Methods used
Survey method was used to collect the data from the samples. A detailed and structured questionnaire comprising the personal, socio economic status, life styles and activity patterns of the samples was prepared. A food habit inventory was also prepared to find out the food habits and dietary pattern of the selected samples.
Three different checklists were prepared to find out the knowledge, attitude and practice regarding healthy eating habits among the samples. Each consists of 20 statements with two points Yes/ No, were 'Yes' receives a score of two and 'No'- a score of one. The sum of the total scores will represent the score for knowledge of the samples. The maximum score that a sample can obtain is 40. The scores were further categorized as low, medium and high.

Pilot study
In order to check the feasibility and effectiveness of the prepared tools, a pilot study was carried out among 25 adolescents and the tools were modified based on the results.

Analysis and interpretation of data
The collected data were statistically analysed and interpreted using appropriate statistical methods.

Results
Table no:1 reveals that about 63.7 percent of the samples belong to the age group of 12-13yrs of age and about 36.3 percent belongs to the age group of 14-15 yrs of age. It was found that sixty three percent of the sample resides in the rural areas, and thirty seven percent resides in the urban areas. About 33.3 percent of the samples belong to joint families and 66.7 percent of the samples belong to nuclear family. About 66 percent of the samples have one sibling. While 18 percent of the samples have two siblings, 2 percent of the samples have three siblings, and remaining 14 percent of the samples were single child.
Regarding the ordinal position of the samples in the family, 14 percent of the samples were single child in their families, 32.3 percent of the samples were first child in their families, 47.3 percent of the samples were second child in their families, 5.7 percent of the samples were third child in their families, and only 0.7 percent of the sample is fifth child in their family.

Dietary habits
Food habits greatly influence the nutritional status of an individual. Food habits are influenced by religion, beliefs, taboos or customs.
Figure 1 reveals that about 96.3 percent of the samples were non vegetarian, and remaining 3.7 percent of the samples were pure vegetarians. A majority of 70.7 percent of the samples

follow the three meals a day pattern, while 19 percent of the samples follow less than three meals a day, 10.3 percent of the samples follow more than three meals a day.
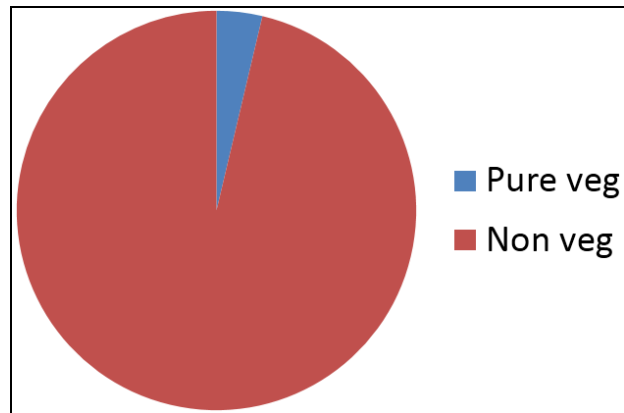

Fig 1: Type of Diet

Association between meal pattern of the samples based on gender
Chi square analysis was done to compare the samples based on their meal pattern and was depicted in the following table no: 2.
While comparing the meal pattern of the samples based on gender; it was found that majority of seventy two percent of the girls follow a three meal pattern a day; whereas; 22 percent of the boys follow more than three meals a day pattern. This difference in the meal pattern among the genders is found to be statistically significant (p value 6.948), at 5 percent level; which means that meal pattern varies among both the genders.
Table No: 3 Shows the data regarding skipping of meals by the samples and also the common meal that usually skips by the adolescents.
It was shocking to find that about 60.3 percent of the samples have the habit of skipping their meals, of which, 33 percent of them skips breakfast, 5 percent of the samples skips lunch, and 20 percent of the samples skips their dinner, and 1.3 percent of the samples have the habit of skipping both breakfast and lunch and 1 percent skips both breakfast and dinner. The students unanimously reported that lack of time in between schooling and tuitions and early morning tuitions, over load of assignments, project works, weekly class tests and cultural activities are the major reasons for their meal skipping. This result is similar to the findings of Kotecha, *et al.* (2013) [3] in their study on the dietary pattern of school going adolescents in urban areas of Baroda, India.

Association between skipping habit of the samples based on gender
Chi square test was executed to find out the association between skipping habit of the samples based on gender. The details regarding the same are presented in table no: 4.
While comparing the skipping habit of the adolescents with regard to their gender it was found that, there exists significant association among the variables considered for study. It was found that skipping of meals was found to be high among boys (66.66%) than girls (33.34%). The tendency of skipping breakfast and lunch was found to be high among boys; 59.9%and 100 % with respect to the total number of samples skipping these meals. It was found that skipping dinner was found to be common among girls and when enquired about this tendency, majority of them believes that skipping dinner will help them to retain body weight. The p value obtained for

the association is 25.280 and is found to be statistically significant at 1percent level. Thus it can be concluded that there exist significant gender differences in the skipping pattern of the samples.

Eating habits of samples
Table No.5 shows the data regarding habit of eating from outside by the samples.
Above table shows that about 84 percent of the samples consume food from outside; of which 38.7 percent consume food from outside rarely, 19.7 percent consume weekly, 23.3 percent consume monthly, and about 1.3 percent of the samples consume food from outside daily. The eating pattern of the samples clearly reveals not only the attitude of the adolescents but the community as a whole in Kerala; towards eating out. The above findings of the study are similar to that of the studies conducted in various parts of Kerala. Lifestyle diseases are increasing both in urban and rural areas. Modern consumption pattern and reduction in physical activities are the reasons behind these problems in Kerala [2]. Lifestyle diseases and obesity are increasing among the police [4]. Entrance and spread of lifestyle diseases make a major challenge in the health sector of Kerala [5]. The demographic and health transition in Kerala have been remarkable and follow a pattern similar to the advanced countries. But the transition from traditional illness pattern to modern neo-plastic diseases has substantially increased the public health care burden [1].

Physical Activity of the Samples
Among the 68 percent of the samples who have the habit of doing exercise; 19 percent have the habit of walking, 25 percent engages either in playing cricket/ football / badminton; 0.7 percent do yoga, 5.3 percent do regular swimming, 2.3 percent do jogging and remaining 2.7 percent of them engages in dancing to be active physically. It was interesting to note that, about 31.7 percent of the samples have the habit of exercising to lose their body weight, and it was found to be common among adolescent boys (54.7%), than adolescent girls (45.3%). Boys prefer to do cycling and swimming to reduce body weight and girls preferred to dancing, yoga and walking for losing body weight.

Distribution of the samples based on their Body Mass Index (BMI)
In order to study the BMI of the samples, the height and weight of all the samples were recorded and following conclusions were drawn from the obtained data.
From the table no:6 it was found that though, majority of the samples (68.8%) were having normal body weight, with respect to their age and height, the prevalence of overweight and underweight was common among them. About 23.3% of the samples were under weight and was slightly higher among adolescent boys than females. Obesity was found among 0.4% of the adolescent girls.

Table 1: Socio economic background

Category	Number (n=300)	Percentage (%)
Age (in years)		
12-13yrs	191	63.7
14-15yrs	99	36.3
Place of residence		
Rural	189	63.0
Urban	111	37.0
Type of the family		
Joint	100	33.3
Nuclear	200	66.7
Number of siblings		
One	198	66.0
Two	54	18.0
Three	6	2.0
None	42	14.0
Ordinal position in the family		
Single child	42	14.0
First child	97	32.3
Second child	142	47.3
Third child	17	5.7
Fourth child	2	0.7

Table 2: Association between meal pattern of the samples based on gender

Variables			meal pattern			Total	P Value	SIG
			three meal	less than three meals	more than three meals			
gender	BOYS	Count	104	24	22	150		
		% within gender	69.3%	16.0%	14.7%	100.0%		
		% within meal pattern	49.1%	42.1%	71.0%	50.0%	6.948	.031*
	GIRLS	Count	108	33	9	150		
		% within gender	72.0%	22.0%	6.0%	100.0%		
		% within meal pattern	50.9%	57.9%	29.0%	50.0%		
Total		Count	212	57	31	300		
		% within gender	70.7%	19.0%	10.3%	100.0%		
		% within meal pattern	100.0%	100.0%	100.0%	100.0%		

Table 3: Skipping Of Meals

Category	Number (n=300)	Percentage (%)
Habit of skipping meals		
Yes	181	60.3
No	119	39.7
Total	300	100
Type of meal skipped		
Breakfast	99	33.0
Lunch	15	5.0
Dinner	60	20.0
Both breakfast & lunch	4	1.3
Both breakfast & dinner	3	1.0
Total	181	60.3

Table 4: Association between skipping habit of meals and gender

Variables		Skipping habit						Total	pvalue	Sig
		yes	no	bf	lunch	dinner	Any two			
Boys	Count	100	50	59	15	23	2	150		
	% within gender	66.66%	42.01%	39.3%	10.0%	15.3%	1.3%	100.0%		
	% within skipping habit	55.24%	27.62%	59.6%	100.0%	38.4%	50.0%	50.0%	25.280	0.000**
girlxs	Count	81	69	40	0	37	5	150		
	% within gender	54%	46%	26.66%	0	24.66	3.33	100.0%		
	% within skipping habit	33.34	58.01	40.4%	0	61.6%	71.42%	50.0%		
	Count									
	% within gender	181	119	99	15	60	7	300		
	% within skipping habit	60.3 100.0%	39.7 100.0%	33.0 100.0%	5.0 100.0%	20.0 100.0%	3.3 100.0%	100.0% 100.0%		

**Significant at 1%level

Table 5: Eating habits of samples

Category	Number (n=300)	Percentage (%)
Habit of eating from outside		
Yes	252	84
No	48	16.0
Total	300	100
Frequency of eating outside		
Daily	4	1.3
Weekly	59	19.7
Monthly	70	23.3
Rarely	116	38.7
Total	300	100

Table 6: Distribution of the samples based on their Body Mass Index (BMI)

Grades	Total	Boys	Girls
Under weight (<18.5)	70 (23.3 %)	40 (26.6 %)	30 (20%)
Normal weight (18.5-24.9)	206 (68.8 %)	108 (72 %)	98 (66%)
Over weight (25-29.9)	22 (7.3%)	2 (1.4%)	20 (13.6%)
Obesity (BMI of 30 or greater)	2 (0.6%)	0	2 (0.4%)
Grandtotal	300	150	150

Conclusion
From the study, it can be concluded that the prevalence of under weight was found to be common among the adolescents irrespective of gender. The result also throws light on the emergency to address the health status of adolescents.

Adolescents should be given proper awareness about the importance of healthy life style and its implications in their future life. The curriculum of the adolescents should clearly focus on the healthy eating habits and life styles, and this should be given to them at the very early stages of development, right from the school going period. Having an adequate diet and especially the importance of having breakfast at proper time and in required quantity and quality is very essential for a healthy and sound body.

Recommendations
Following recommendations can be chalked out based on the findings of the present study:
1. Skipping of breakfast should be treated as a matter of serious concern, not only for adolescents, but people at all ages.
2. School authorities, especially Parent Teacher Associations, have to look in to options on providing breakfast at schools, for those who could not have at home; Breakfast corners could be introduced for the same.
3. It was clearly evident from the study that, the poor dietary or eating habits was not due to ignorance, but due to poor practice on the gained knowledge.
4. Good eating practices and the necessity of regular exercise should be cultivated right from kinter gardens itself.

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