

Food Habits and Physical Activity among Adolescent Medical Students of a Medical College in Tumkur, Karnataka, India

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Abstract

Background: Adolescence is a transitional stage of physical, physiological and psychological development from puberty to legal adulthood. Worldwide more than 1.2 billion are adolescents i.e. one in every six persons is an adolescent. About 21% of Indian population is adolescents. The health status of an adolescent determines the health status in his/her adulthood. Healthy dietary habits & physical activity among medical students are even more important as they are future physicians.

Objectives: 1. To assess the dietary habits of the study subjects. 2. To assess the physical activity of the study subjects

Methodology: A cross-sectional study was conducted among the adolescent medical students (<19yrs) during January-April 2019. Data on dietary habits & physical activity was collected using pretested semi-structured questionnaire & PAQ-A scale (Physical activity questionnaire- Adolescents).

Results: Among the study subjects, 73.5% were male, 25.8% consumed all three meals in a day, 90.3% and 58.1% skipped their breakfast & dinner respectively, <30% consumed healthy foods like fruits & vegetables, milk etc. Almost everyone consumed junk food at least once a week. 51.5% felt that they had unhealthy food habits. 29.4% spent their free time doing very little/no physical activity. 50% never engaged in sports activity. Walking was the most common physical activity (45.5%).

Conclusion: There was an alarming prevalence of unhealthy dietary practices, & poor physical activity that should be targeted and modified. Strategies need to be adopted to improve young youths' nutritional status and to establish a healthy lifestyle.

Key words: Food habits, physical activity, adolescent, medical students

Introduction

Adolescents are the young people aged between 10 to 19 y. It is a transitional stage of physical, physiological and psychological development from

puberty to legal adulthood. Worldwide more than 1.2 billion are adolescents: this indicates that roughly one in every six persons is an adolescent.¹ About 21% of Indian population is adolescents (about 243 million).²

They are the future of the nation, forming a major demographic and economic force. The health status of an adolescent determines the health status in his/her adulthood. Many serious diseases in adulthood have their roots in adolescence.³

Physical activity is every movement produced by skeletal muscles that results in energy expenditure⁴

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and is also one of the most important steps in health improvement. Sedentary behavior is not simply a lack of physical activity but is a cluster of individual behaviors where sitting or lying is the dominant mode of posture and energy expenditure is very low.⁵ It is well-known that physical activity decreases the prevalence of many chronic diseases, such as cardiovascular, autoimmune and malignant diseases as well as diabetes mellitus.

Beside physical activity, adequate dietary habits are equally important in the prevention of many diseases and health improvement. Therefore, one of the most important problems of modern life is obesity that arises from inadequate physical activity and bad dietary habits.⁶ A shift from high school to college is one of the most vulnerable periods in the life of young adult person who is faced with many different challenges. During this period an individual deals with huge pressure and expectations which therefore inevitably lead to changes in the lifestyle. A great number of students leave their parents' homes, resulting in alteration of dietary habits and life conditions. Healthy life habits are exchanged with an unhealthy lifestyle usually at the beginning of college. This unhealthy lifestyle mostly refers to increased consumption of fast food and decreased consumption of fruits and vegetables. Snacking and breakfast skipping are frequent in young youth.

Healthy dietary habits among medical students are even more important as they are future physicians. Amongst this college population, it is assumed that the medical students have a great knowledge about healthy lifestyle and dietary habits. However there is no evidence to indicate that this knowledge translates into practices in terms of maintaining good health.

Hence this study was taken up to assess the dietary habits and physical activity among adolescent medical students of a Medical college.

Objectives:

- a. To assess the dietary habits of the study subjects
- b. To assess the physical activity of the study subjects
- c. To assess the association between the dietary pattern and physical activity of study subjects

Materials and Methods

A cross-sectional study was conducted between

January – August 2019 at a medical college in Tumkur. Medical students in the adolescent age group (10-19years) studying in the college.

Inclusion criteria: Medical students in adolescent age group (10-19years) who consent for the study

Exclusion criteria: Absent at the time of data collection even after 3 visits

Methodology

After taking permission from head of the Institution & IEC, the first and second year students who fulfil the inclusion & exclusion criteria were approached and the purpose of the study was explained. Data was collected using pre-tested semi structured questionnaire regarding the dietary pattern in the last 7days in collected and data on physical activity was collected using PAQ-A (Physical activity Questionnaire-Adolescents). Data was entered in MS-excel and analysed using SPSS version 20. Data like socio-demographic data was analysed using descriptive statistics. Association was assessed using chi square and Fischer's exact test. Quantitative data was analysed using T-test to compare between 2 groups.

Results

A total of 131 study subjects responded to the questionnaire and hence were included in the study.

- i. Socio-demographic profile of study subjects:

Among the study subjects, 53 (40.5%) were females and 78 (59.5) were males. Age of the study subjects was 18.84 ± 0.39 years. Height, weight and BMI was 62.5 ± 15.9 Kg, 163.8 ± 14.57 cm and 23.5 ± 5.9 respectively. 76 (58.0%) had normal BMI, 15 (11.5%) were thin and 9 (6.9%) were severely thin. 15 (11.5%) were overweight and 16 (12.2%) were obese. There was a statistically significant difference in weight and height between male and female study subjects. (Table 1)

- ii. Dietary pattern of the study subjects:

Only 59 (45.0%) of study subjects consumed all three major meals of the day. Skipping of breakfast and dinner was seen in 22 (16.8%) and 3 (2.3%) respectively. Adequate fruits and vegetables were consumed by 55 (41.9%) and 61 (46.6%) respectively. Unhealthy foods like soft drinks, salted snacks and fried food & chats were consumed by 40 (30.5%), 40 (30.5%) and 39

(29.8%) respectively. Only 32 (24.4%) felt that they had healthy food habits. There was a statistically significant difference in consumption of 3 major meals, skipping of breakfast, consumption of fruits, vegetables, soft drinks, salted snacks and perception regarding dietary habits between male and female subjects. (Table 2)

iii. Physical activity among the study subjects:

Among the study subjects, 91 (69.5%) were inactive, 32 (24.4%) were minimally active and only 8 (6.1%) were very active. There was a statistically significant

association between physical activity and sex of the study subjects. (Table 3)

iv. Association between dietary pattern and physical activity:

Consumption of all three meals, not skipping of breakfast or dinner, adequate consumption of fruits and vegetables was relatively higher in very active study subjects compared to minimally active and inactive study subjects. There was a statistically significant association between perception about diet and physical activity. (Table 4)

Table 1: Socio-demographic profile of the study subjects

Characteristics	Total	Male	Female	p-value
Age	18.84±0.39	18.85±0.39	18.83±0.38	0.81
Weight	62.5±15.9	66.48±13.34	54.85±10.1	<0.001
Height	163.8±14.57	169.6±11.9	155.3±14.0	<0.001
BMI	23.5±5.9	23.28±5.05	23.15±5.79	0.89
Severe thin	9 (6.9)	8 (10.3)	1 (1.9)	0.18
Thin	15 (11.5)	10 (12.8)	5 (9.4)	
Normal	76 (58.0)	41 (52.6)	35 (66.0)	
Overweight	15 (11.5)	11 (14.1)	4 (7.5)	
Obese	16 (12.2)	8 (10.3)	8 (15.1)	

Table 2: Dietary pattern of the study subjects

Characteristics*	Total	Male	Female	P-value
Consumption of all 3 major meals	59 (45.0)	43 (55.1)	16 (30.2)	0.005
Skipping of breakfast	22 (16.8)	4 (5.1)	18 (34.0)	<0.001
Skipping of dinner	3 (2.3)	2 (2.6)	1 (1.9)	0.51
Fruits	55 (41.9)	40 (51.3)	15 (28.3)	0.028
Vegetables	61 (46.6)	44 (56.4)	17 (32.1)	0.03
Soft drinks	40 (30.5)	29 (37.2)	11 (20.8)	0.018
Salted snacks	40 (30.5)	32 (41.0)	8 (15.1)	0.019
Fried food & chats	39 (29.8)	28 (35.9)	11 (20.8)	0.24
Perception of eating habits: healthy	32 (24.4)	27 (34.6)	5 (9.4)	<0.001

*Multiple responses

Table 3: Physical activity among the study subjects

Characteristics	Total	Male	Female	p-value
Inactive	91 (69.5)	48 (61.5)	43 (81.1)	0.011
Minimally active	32 (24.4)	22 (28.2)	10 (18.9)	
Very active	8 (6.1)	8 (10.3)	-	

Table 4: Association between dietary pattern and physical activity

Characteristics	Inactive	Minimally active	Very active	P-value
Consumption of all 3 major meals	38 (41.8)	16 (50.0)	5 (62.5)	0.249
Skipping of breakfast	19 (20.9)	2 (6.3)	1 (12.5)	0.311
Skipping of dinner	3 (3.3)	-	-	0.102
Vegetables	41 (45.1)	14 (43.8)	6 (75.0)	0.629
Fruits	38 (41.8)	10 (31.3)	7 (87.5)	0.165
Soft drinks	28 (30.8)	8 (25.0)	4 (50.0)	0.731
Salted snacks	27 (29.7)	8 (25.0)	5 (62.5)	0.218
Fried food & chats	26 (28.6)	7 (21.9)	6 (75.0)	0.057
Feels that their eating habits are healthy	16 (17.6)	11 (34.4)	5 (62.5)	0.043

Discussion

Among the study subjects, 53 (40.5%) were females and 78 (59.5) were males. Age of the study subjects was 18.84 ± 0.39 years. In a study in Surat by Piyushkumar¹¹ et al., 56% (164) were girls and 44% (129) were boys with the mean age of 18.65 ± 1.45 years. In another study by Goran Janković¹⁰ et al., the age of study subjects was 19.97 ± 0.56 years

In the present study, 76 (58.0%) had normal BMI, 15 (11.5%) were thin and 9 (6.9%) were severely thin, 15 (11.5%) were overweight and 16 (12.2%) were obese. In a study by Piyushkumar¹¹ et al., 115 (43%) had normal BMI, 89 (33%) were underweight and 65 (24%) were pre-obese and obese. In another study by Goran Janković¹⁰ et al., 369 (75.80%) had normal BMI, 31 (6.40%) were underweight, 81 (16.60%) were overweight and 6 (1.20%) were obese.

In the present study, only 59 (45.0%) of study subjects consumed all three major meals of the day. Skipping

of breakfast and dinner was seen in 22 (16.8%) and 3 (2.3%) respectively there was a statistically significant difference in consumption of 3 major meals, skipping of breakfast, consumption of fruits, vegetables, soft drinks, salted snacks and perception regarding dietary habits between male and female subjects. In another study by Mohanty BB⁷ et al., there was a statistically significant difference in number of meals & snacks, meat, fruits & vegetables, dairy food and juice. In another study by Manijeh Alavi¹² et al., (48.4) skipped breakfast while only few (8.3 percent) skipped lunch

In the present study, 91 (69.5%) were inactive, 32 (24.4%) were minimally active and only 8 (6.1%) were very active. There was a statistically significant association between physical activity and sex of the study subjects. In another study by Goran Janković¹⁰ et al., 305 (62.20%) were moderately active, 110 (22.40%) were very active and 75 (15.30%) were inactive. But there was no statistically significant association between physical activity and sex of the study subjects. In another

study by Hamdan¹³ et al., about 50% of the students performed physical activities and exercise sometimes, whereas very few performed physical activities and exercise on regular basis.

In the present study, Consumption of all three meals, not skipping of breakfast or dinner, adequate consumption of fruits and vegetables was relatively higher in very active study subjects compared to minimally active and inactive study subjects. There was a statistically significant association between perception about diet and physical activity. In another study by Goran Janković¹⁰ et al., there was a statistically significant association between physical activity and consumption of meat & meat product, white flour products and commercial drinks.

Conclusion

- There was an alarming prevalence of unhealthy dietary practices, & poor physical activity that should be targeted and modified.
- Strategies need to be adopted to improve young youths' nutritional status and to establish a healthy lifestyle

Ethical Clearance- Taken from Institutional ethical committee of Sri Siddhartha Medical College, Tumkur, Karnataka

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Conflict of Interest - Nil

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