

# Lifestyle Behaviour among Undergraduate Medical Students in Tamil Nadu: A Cross-sectional Study

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## ABSTRACT

**Introduction:** Lifestyle related behavioural risk factors such as physical inactivity and nutrition transition like increased consumption of high-fat and low-fiber diet are found to be risk factors for Non Communicable Diseases (NCD) worldwide. Medical students are susceptible to poor eating habits, physical inactivity, lack of sleep or acquisition of new habits, such as smoking and alcohol. They have been shown to exhibit early risk factors for chronic diseases. Hence, it is essential to assess the lifestyle behaviour among medical students as they are future healthcare providers.

**Aim:** To assess the lifestyle behaviour among the undergraduate medical students and to compare lifestyle behavioural factors between gender.

**Materials and Methods:** A cross-sectional study was conducted among 200 undergraduate medical students, selected by using random sampling method from first year to final year of a government medical college in Chennai, Tamil Nadu from June 2018 to August 2018. Self-administered questionnaire was used to collect data regarding socio-demographic profile and lifestyle behaviours such as dietary pattern, physical activity, sedentary

behaviour, sleep duration, smoking and alcohol consumption. Descriptive statistics for qualitative data and Chi-square test to test the proportions were used.

**Results:** A total of 200 undergraduate medical students participated in the study. The mean age of the study participants was 20.2 years with a standard deviation of 1.34. Out of the 200 study participants, 132 (66%) were females and 68 (34%) were males. Skipping of meals was seen in 54% students. Vegetables and fruits intake  $\leq 3$  times/week were found in 25.5% and 63% students respectively. Smoking was observed in 3% and alcohol intake in 7.5% students. Lack of exercise was noted in 46%. Television viewing/mobile usage for >4 hours per day was observed in 30.5% students. Sleep duration of <6 hours/day was noted in 11%. Frequent carbonated drinks consumption (>3 times/week) was significantly higher in males (14.7%) as compared to females (5.3%). Inadequate exercise was significantly higher in females.

**Conclusion:** Behavioural risk factors such as unhealthy diet, irregular eating habits, and physical inactivity were prevalent among the medical undergraduate students.

**Keywords:** Dietary habits, Lifestyle determinants, Physical activity, Sedentary behaviour

## INTRODUCTION

The World Health Organisation (WHO) reported 60% of the morbidity and mortality of Non Communicable Diseases (NCD) is dependent on lifestyle behavioural factors [1]. Declining physical activity and nutrition transition like increased consumption of high-fat and low-fiber diet are found to be risk factors for NCDs worldwide [2]. Unhealthy habits introduced during young adulthood usually persist in later life and can increase the risk of several chronic diseases [3,4]. Many health problems in adulthood can be prevented if their related health risk behaviours are identified and changed at an early stage of life [5].

Medical students are susceptible to poor eating habits, physical inactivity, lack of sleep or acquisition of new habits, such as smoking and alcohol [6,7]. Also, medical students have been shown to exhibit early risk factors for chronic diseases [8]. The adoption and practice of a healthy lifestyle by medical students is critical for them to be role models and have the ability to influence their patients and the general population [9]. Hence, this study was conducted to assess lifestyle behaviour among undergraduate medical students of a government medical college in Tamil Nadu and design specific health interventions based on the findings of the study.

## MATERIALS AND METHODS

A cross-sectional study was conducted among undergraduate medical students of a government medical college in Chennai, Tamil Nadu from first to final year between June and August 2018.

Institutional Ethics Committee clearance was obtained (IEC No-34/2018).

**Sample size calculation:** Sample size was calculated using the following formula:

$$n = 4pq/d^2$$

Based on the previous study, prevalence of 67% of physical inactivity among medical students in a study conducted in central India [7] the so, the sample size required for this study, with an allowable error of 10%, was 200.

**Inclusion criteria:** All the students who were willing to participate were included in the study after obtaining the informed consent.

**Exclusion criteria:** Students who were not willing to participate were excluded from the study.

A total of 200 Bachelor of Medicine and Bachelor of Surgery (MBBS) students from first year to final year studying in this college were selected to make final sample comprising 50 students from each year by random sampling.

A predesigned, pretested, semi-structured, self-administered questionnaire was used for collecting information from the study participants. It was prepared based on literature review and to maintain the validity experts' opinion was obtained. The printed questionnaire was distributed to the study participants in their free time between the classes. The questionnaire consisted of socio-demographic profile and lifestyle behavioural factors such as dietary pattern, physical activity, sedentary behaviour, sleep duration, smoking and alcohol consumption [Annexure-1].

## STATISTICAL ANALYSIS

The data entry was made in Microsoft excel sheet in codes. Data analysis was done using Statistical Package for Social Sciences (SPSS) software version 21.0. Descriptive statistics were used to describe socio-demographic profile and lifestyle behavioural factors. Chi-square test was used to test the proportion between male and female for their lifestyle behavioural factors. A p-value <0.05 was considered as statistically significant.

## RESULTS

A total of 200 students participated in the study. The mean age of the study participants was 20.2 years with a standard deviation of 1.34. Out of the 200 study participants, 132 (66%) were females and 68 (34%) were males. There were 105 (52.5%) hostellers and 95 (47.5%) were day scholars. Lifestyle behavioural factors and the gender-wise comparison are presented in [Table/Fig-1]. Dietary pattern showed majority of students (81.5%) were non vegetarians and 53.5% students skipped their meals. Vegetables and fruits intake of  $\leq 3$  times/week were found in 25.5% and 63% students, respectively. Consumption of carbonated drinks and fast foods >3 times/week were seen in 8.5% and 11.5%, respectively.

Lifestyle behavioural factors	Response category	Male (68) n (%)	Female (132) n (%)	Total N (%)	Chi-square value	p-value
<b>Dietary pattern</b>						
Skipping of meals	Yes	34 (50.0)	73 (55.3)	107 (53.5)	0.507	0.550
	No	34 (50.0)	59 (44.7)	93 (46.5)		
Vegetable intake/week	$\leq 3$ times	23 (33.8)	28 (21.2)	51 (25.5)	3.757	<b>0.040*</b>
	>3 times	45 (66.2)	104 (78.8)	149 (74.5)		
Fruits intake/week	$\leq 3$ times	44 (64.7)	82 (62.1)	126 (63)	0.129	0.759
	>3 times	24 (35.3)	50 (37.9)	74 (37)		
Carbonated drink intake/week	$\leq 3$ times	58 (85.3)	125 (94.7)	183 (91.5)	5.102	<b>0.032*</b>
	>3 times	10 (14.7)	07 (5.3)	17 (8.5)		
Fast food intake/week	$\leq 3$ times	60 (88.2)	117 (88.6)	177 (88.5)	0.007	1.000
	>3 times	08 (11.8)	15 (11.4)	23 (11.5)		
<b>Deleterious habits</b>						
Smoking	Yes	06 (8.8)	0 (0.0)	6 (3.0)	12.007	<b>0.001**</b>
	No	62 (91.2)	132 (100)	194 (97.0)		
Alcohol consumption	Yes	12 (17.6)	03 (2.3)	15 (7.5)	15.291	<b>0.0001***</b>
	No	56 (82.4)	129 (97.7)	185 (92.5)		
<b>Physical activity</b>						
Exercise frequency/week	5-7 days	27 (39.7)	29 (22.0)	56 (28)	10.62	<b>0.005**</b>
	1-4 days	20 (29.4)	32 (24.2)	52 (26)		
	No exercise	21 (30.9)	71 (53.8)	92 (46)		
<b>Sedentary habits</b>						
Television/ Mobile usage per day	<2 hours	18 (26.5)	36 (27.3)	54 (27)	2.134	0.344
	2-4 hours	25 (36.8)	60 (45.5)	85 (42.5)		
	>4 hours	25 (36.8)	36 (27.3)	61 (30.5)		
<b>Sleep duration</b>						
Sleep duration/day	<6 hours	09 (13.2)	13 (9.8)	22 (11)	1.030	0.598
	6-8 hours	57 (83.8)	112 (84.8)	169 (84.5)		
	>8 hours	02 (2.9)	07 (5.3)	09 (4.5)		

[Table/Fig-1]: Gender-wise comparison of lifestyle behavioural factors (N=200).

\*Significant; \*\*Very significant; \*\*\*Highly significant

Alcohol intake was present in 15 students (7.5%) of which 11 started consuming alcohol after joining medical college. Smoking was noted in 6 students (3%) of which 5 started smoking after joining medical college. The habit of exercising was not present in 46%. Barriers to do exercise were lack of time (57%), bad weather (13%), social disapproval (10.5%), health issues (10%), and fear of injuries (3%). Television viewing/mobile usage for >4 hours/day was

observed in 30.5% students. Sleep duration of <6 hours was found in 11%. Intake of vegetables >3 times/week was significantly higher in females as compared to males. Frequent carbonated drinks consumption (>3 times/week) was significantly higher in males than females. Alcohol consumption was noted in 17.6% males and 2.3% females. Inadequate exercise was found to be significantly higher in females.

## DISCUSSION

This was a cross-sectional study to assess the lifestyle behaviour among the undergraduate medical students. Irregular dietary habits such as skipping of meals were found in more than half of the students which was also reported in other studies [10-13]. Regularity in the timing of meals is very important, as it enhances digestion and appetite [14]. For medical students, long lasting energy is more essential due to their busy academic schedule and thus regularity in food intake decreases the risk of getting fatigue [15].

Inadequate vegetable (25.5%) and fruit consumption (63%) were noted among students which was reported in other studies also [16,17]. Low intake of fruits and vegetables is associated with several chronic diseases at adulthood [18]. Frequent consumption of unhealthy foods like carbonated drinks (8.5%) and fast foods (11.5%) were found among the medicos. Frequent carbonated drinks (23.7%) and fast food (32%) intake were noted among medical students in Delhi which was higher than the present study [6].

Low proportion of smoking (3%) and alcohol consumption (7.5%) was noted in the present study comparable to studies conducted in South India [19,20]. Interestingly, among those who were smoking and consuming alcohol many had developed these habits after admission to MBBS which was also reported in a study conducted in central India [7]. Curiosity, peer pressure, pleasure and stress relief were reported as reasons for initiation of substance abuse among medicos in other studies [21,22].

The habit of exercise was not present in nearly half of the students which is not a favourable trend. Physical inactivity among medicos was also reported in other studies [6,19,20,23]. The barriers to do exercise such as lack of time, bad weather, social disapproval, health issues and fear of injury were found in the present study. Rao CR et al., too reported lack of time as a barrier to do exercise among medicos [8]. Physically inactive persons have a greater risk of developing many undesirable health conditions [24]. Sedentary activity like increased hours of television viewing/mobile usage (>4 hours/day) was seen in 30.5% students. Paul B et al., reported 47.6% students spent  $\geq 4$  hours in sedentary activity which was higher than the present study [19]. Substantial time and energy of medical students is likely to be occupied with their studies. On the other hand, increase in TV watching and mobile usage may provide more choices of entertainment and reduce interest in exercise. Sleep duration of 6-8 hour/day was observed in majority of students (84.5%) which was similarly reported by Patel PH et al., [25]. Sleep stabilises and enhances cognitive processes. Cognitive competences are very important for medical education [26].

Frequent intake of vegetables (>3 times/week) was found higher in females and carbonated drinks consumption (>3 times/week) was higher in males. Saranya S et al., reported no significant gender difference in fruits and vegetables intake however carbonated drink consumption was found higher among the male students [11]. Alcohol intake was noted higher in males as compared to females. Smoking habit was not found in females in the present study which may due to the cultural factors prevailing in India. A multicentric study conducted among medical students in India reported higher prevalence of alcohol and tobacco use among males compared to females [21]. Inadequate exercise was noted higher among females than males. Similarly there was significant gender difference observed with women having low physical activity in a study conducted in Karnataka [27].

## Limitation(s)

This was a cross-sectional study conducted only in one medical college which may limit the generalisability of the findings. Since the responses were collected using self-administered questionnaire, so there may be information bias.

## CONCLUSION(S)

Behavioural risk factors such as unhealthy diet, irregular eating habits and physical inactivity were prevalent among the medical undergraduate students in this study. Among those who were smoking and consuming alcohol many had developed these habits after admission to MBBS. Carbonated drinks consumption and alcohol intake were found higher in males whereas physical inactivity was higher in females. The lifestyle behavioural risk factors are amenable to health promotion intervention measures. Health education sessions should be conducted for medical students emphasising healthy eating and regular physical activity. Efforts to educate and counsel the medical students on problems associated with substance use must be initiated at the very beginning of their medical curriculum. Medical schools should provide suitable environment for students to be physically active through sports and extra-curricular activities. Health promotion activities during medical school is essential in creating future doctors as healthy role models for tomorrow.

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## ANNEXURE-1

### Socio-demographic details

1. Age:
2. Sex:
  - a) Male                      b) Female
3. Studied in a:
  - a) Public school    b) Private school
4. Medium of education in school:
  - a) English            b) Tamil    c) Other languages
5. Year of study in MBBS at present:
  - a) 1 MBBS            b) 2MBBS
  - c) PreFinal        d) Final MBBS
6. I belong to:
  - a) Regular batch    b) supplementary batch
7. I am a:
  - a) Day scholar      b) Hosteller
8. Father's occupation-
9. Mother's occupation-
10. Marital status-
  - a) Married            b) Unmarried

### Dietary pattern

1. Type of diet:
  1. Vegetarian      2. Non vegetarian
2. Frequency of skipping meal in a week? -----
3. Habit of eating between meals?
  - a) Daily    b) Occasionally    c) Never
4. Frequency of vegetable consumption per week? -----
5. Frequency fruits consumption per week? -----
6. Frequency of consumption of carbonated soft drinks per week? -----
7. Frequency of consumption of fast food per week?-----

### Physical activities:

1. Frequency of exercise in days/week (atleast 30 minutes a day) – -----
2. Are you involved in any of the sport activities? Yes/no
3. Any factors that prevents you from doing exercise?
  - a) Fear of injuries while playing outdoor/exercising
  - b) Health condition or disease that prevents
  - c) Bad weather
  - d) Social disapproval
  - e) Others
4. Sedentary behaviour: Spending time on television viewing/ mobile usage in hours/day -----

### Sleep pattern:

1. Duration of sleep?
  - a) Less than 6 hrs
  - b) 6-8 hrs a day
  - c) >8-12 hrs a day
2. Sleep disturbance?
  - a) Daily
  - b) Occasionally
  - c) Never
3. Habit of taking daytime naps?
  - a) Daily    b) Occasionally    c) Never

### Personal habits:

1. Frequency of intake of alcohol
  - a) Daily    b) Sometimes    c) Never
2. Intake of alcohol before/after admission to MBBS.....
3. Frequency of smoking?
  - a) Daily    b) Sometimes    c) Never
4. Smoking before/after admission to MBBS .....