Are Future Doctors Healthy?-Study of Lifestyle Behavior of First-Year Medical Students of Delhi

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Abstract

Background: The current study was done to find out the prevalence of risk factors of non-communicable diseases among students of government medical and dental colleges of Delhi.

Methods: The newly admitted medical and dental students filled a pre-tested proforma pertaining to their lifestyle behavior and sociodemographic features. Anthropometric examination was conducted to find out the prevalence of overweight and truncal obesity. Blood pressure was measured. Chi-square and independent t-test was applied to find out the difference in proportion and mean values of the risk factors in males and females.

Results: Around two-thirds of students were males. The prevalence of ever use of alcohol was more than current use of tobacco (2.2% vs. 1.1%). Truncal obesity was more in females (37%) and overweight was more common in males (26%). More students were doing physical activities of duration less than 30 minutes a day.

Conclusion: The prevalence of truncal obesity and overweight was more in the fresh entrants of a medical and dental college of Delhi.

Keywords: Medical students, Lifestyle, Overweight, Waist-hip ratio, Hypertension.

Introduction

Medical education is stressful throughout the whole course of training. The amount of material to be absorbed, social isolation, pressure of examination, discrepancies between expectation and reality all can be anticipated to bring psychological stress.[1] The stress can lead to hypertension and coronary artery disease later in life.[2,3]

The incidence of stress and stress-related illnesses such as anxiety and depression among students, trainees and qualified physicians internationally is increasingly reported in the literature.[4-6] Indeed, some studies indicate that medical students face unique academic challenges that render them more vulnerable to stress and anxiety than students of other disciplines.[8] These challenges of medical education include the rigors of the educational program and emotionally tense experiences, such as dealing with illness, disease and dying.[9] Many studies underscore the role of the academic environment as a source of stress.[10,11] The age group of 17-21 years is the period of transition when individuals are entering adulthood. Age of most of the students joining medical college falls in this group. The adaptive capacity of the individual to the rigor of work is determined by physical fitness. Most of the studies have looked for stress level and physical health of medical students while well advance in their course; none has attempted to find out the lifestyle behavior of students just starting their medical or dental course. The present study is an endeavor to study the lifestyle behavior and anthropometry of medical students joining a government medical and dental college of National Capital City of Delhi.

Methods

Study Design and Setting

The study was cross-sectional in nature, conducted in a medical college in Delhi. Participants were the students of first-year MBBS and BDS courses, who had come for

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admission to the college after qualifying the pre-medical/ pre-dental test. After taking informed consent from students and their parents, a pre-designed, pretested, self-administered questionnaire was distributed to them. The questionnaire contained items pertaining to students' eating habits, drug abuse and pattern of physical activity, besides questions of socio-demographic nature. The confidentiality of the students was maintained as they were not asked to write their names. The term medical student in this article means both medical and dental students admitted in the first year MBBS and BDS courses at the medical and dental college respectively.

Study Tools

Weight, height, blood pressure, waist and hip circumference of each participant were measured. The weighing scale was placed on a hard, smooth and horizontal surface and the reading corrected to zero before each measurement. The students were asked to stand with bare feet with arms placed by the side, with light clothing and to look straight in the horizontal direction for measurement of weight.[12] To measure the height, a height-measuring board was used. The students were asked to remove footwear and head gear and stand bare feet facing the doctor who was taking the measurements. The height was recorded in centimeters at the exact point. Body mass index was calculated using the formula: BMI=Weight (in kg)/Height (in m^2). All the students were classified according to BMI scores using WHO classification for BMI for adults into underweight, normal and overweight/obese.[13]

The waist circumference was taken using a non-stretchable measuring tape, at the end of normal expiration at the midpoint between the lower margin of the last palpable rib and the top of the iliac crest, making sure that there was no compression of the skin by the tape. For measuring the hip circumference, tape was wrapped around the maximum diameter of the buttocks without constricting the skin. Both hip and waist circumference were recorded to the nearest 0.1 cm. For female students, a female doctor took the measurements. Waist-hip ratio was calculated using the formula WHR=Waist circumference (cm)/ Hip circumference (cm). Truncal obesity was diagnosed when WHR was >0.9 in men and >0.8 in women.[14] Blood pressure was measured using the mercury sphygmomanometer. The subject was made to sit quietly for at least 5 min in a chair. Systolic blood pressure (SBP) was taken at the point where first of two or more Korotkoff sounds were heard (onset of phase-1). The disappearance of Korotkoff sounds (onset of phase-5) was used to define diastolic blood pressure (DBP). A second measurement was made after waiting at least for 30 sec after the cuff was fully deflated. Average of the two readings gave the final reading. A third measurement was taken in case the two SBP or DBP measurements differed by ≥10 mm Hg. In that case, the average of last two readings was recorded. Hypertension was defined based on Joint National Committee VII guidelines.[15] Each measurement for all the students was taken by a male and female doctor in order to avoid inter-observer bias. Current use of tobacco was defined as subjects using tobacco either in the form of smoking, chewing or both, at least once in a week for the past 1 month.

Statistical Analysis

Data were entered and analyzed by SPSS version 16 software (SPSS Inc. SPSS for Windows, Ver. 16, Chicago). Prevalence of various risk factors for lifestyle diseases was calculated. Statistically significant differences in the categorical and quantitative variables were tested by the chi-square and t-test, respectively. All significance tests were 2-tailed and statistical significance was defined as a value of $p<0.05$.

Results

Out of total 184 students who completed the questionnaire, 116 (63%) were males. Majority (87%) of them were less than or equal to 19 years of age. Around 58% students were originally from Delhi. Parents of girl students were more educated than boys ($p<05$). There were significant more number of boys in the reserved category ($p<05$) (Table 1). Around 12% of the students got admission through All India Entrance Examination. All boys joined the course due to their own interest. Out of the four girls who cited other reasons for joining, three joined due to their parents' wish.

The prevalence of current use of any form of tobacco is low (1.1%). But, almost double that number (2.2%) has ever consumed an alcohol product. More (48.5%) females were sedentary, doing physical activity of less than 30 min in a day. However, overweight was significantly more prevalent in males (25.9%). Females had significantly more (36.8%) truncal obesity. Sedentary activity was more common in students of age above 20 years. Only 3 (2.6%) male students were suffering from hypertension. None of the students was using any habit-forming drug. Values for other lifestyle behavior were almost similar in male and female students. Only intake of pulse was significantly more in females and time spent in playing computer games was significantly more in males (Table 3).

Table 1.Sociodemographic Characteristics of the Study Population

Characteristic	Male n=116 (%)	Female n=68 (%)	Total n=184 (%)	p-value
Course				
MBBS	104 (89.7)	63 (92.6)	167 (90.8)	0.604
BDS	12 (10.3)	5 (7.4)	17 (9.2)	
Age (in years)				
≤19	94 (81)	66 (97.1)	160 (87)	0.002*
>19	22 (19)	2 (2.9)	24 (13)	
Native state				
Delhi	72 (62.1)	35 (51.5)	107 (58.2)	0.167
Outside Delhi	44 (37.9)	33 (48.5)	77 (41.8)	
Category				
General	79 (68.1)	58 (85.3)	137 (74.5)	0.007*
Reserved (OBC/SC/ST)	37 (31.9)	10 (14.7)	47 (25.5)	
Education of father				
Passed class 12	32 (27.6)	4 (5.9)	36 (19.6)	0.000*
Graduate and above	84 (72.4)	64 (94.1)	148 (80.4)	
Education of mother				
Passed class 12	46 (39.7)	5 (7.4)	51 (27.7)	0.000*
Graduate and above	70 (60.3)	63 (92.6)	133 (72.3)	

(Value in parentheses is column percentage) *p value <.05 (statistically significant)

Table 2.Prevalence of Risk Factors for Non-communicable Diseases (NCDs)

Risk factor	Sex		Age (in years)		
	Male n=116 (%)	Female n=68 (%)	≤19 n=160 (%)	>19 n=24 (%)	Total n=184 (%)
Current tobacco users	2 (1.7)	0	2 (1.2)	0	2 (1.1)
Ever alcohol intake	4 (3.4)	0	2 (1.2)	2 (8.3)	4 (2.2)
Sedentary activity	45 (38.8)	33 (48.5)	62 (38.8)	16 (66.7) *	78 (42.4)
Overweight (BMI ≥25 kg/m^2)	30 (25.9)*	8 (11.8)	33 (20.6)	5 (20.8)	38 (20.7)
Central obesity (WHR >.9 for males and >.8 for females)	11 (9.5)	25 (36.8)*	33 (20.6)	3 (12.5)	36 (19.6)
Hypertension	3 (2.6)	0	3 (1.7)	0	3 (1.6)

(Value in parentheses is column percentage) *p value <.05 (statistically significant)

Table 3.Other Lifestyle related Behaviors

Behavior	Male (n=116)	Female (n=68)	p-value
Number of days eating any fruit in a week	5.2	5.6	.16
Amount of fruit intake in a day	2.495 g	2.156 g	.13
Number of days consuming green leafy vegetables in a week	4.3	4.7	.16
Number of days consuming any pulse in a week	5.1	5.7	.03*
Number of days drinking carbonated drink in a week	1.7	1.4	.31
Average time spent in doing Yoga in a day	6.7 min.	4.6 min.	.35
Average time spent in doing meditation in a day	5.5 min.	2.9 min.	.06
Average time spent in sleep in day	7.3 hr.	7.4 hr.	.5
Average time spent in viewing TV in a day	73.4 min.	63.9 min.	.30
Average time spent in playing computers games in a day	27.0 min.	12.50 min.	.005*

*p value <.05 (statistically significant)

The students were divided into belonging to upper, upper-middle, lower-middle, upper-lower and lower socioeconomic strata according to Gupta and Mahajan socioeconomic status scale.[16] Overweight was more common in students belonging to upper strata of society (p<05). There was no significant association between the socioeconomic strata and other risk factors.

 ISSN: 2455-7048

Discussion

The non-communicable diseases (NCDs) are on the rise and manifest in younger population in India. The children and adolescents of today are catching the bad habits sooner due to booming economy and faster communication. For today's youth, everything is available at the click of a button or mouse. The world has shrunk to a global village. If children are not taught the bad effects of today's scenario, their lifestyle would become favorable for NCDs. The population of the current study is adolescents or at best young adults. This is a very crucial phase in anyone's life. The behavior or habit in this age group is the product of their upbringing and may continue to adulthood where it may be enforced when they become financially independent. The study was conducted in first-year medical and dental students, which become more important as they will become the doctors of next generation. They will advise their patients, community and formulate strategies in future. If they themselves are not following good habits or are not physically fit, how can we expect them to give proper advice to the patients? Also, a physically unhealthy physician sends wrong message to the society.

Students getting admission in top government medical colleges of India are the brightest minds. Supposedly, they spend more time in studying rather than going out for play. Moreover, rigor of medical study forces them to cram books and as a result of frequent examinations, they restrict their physical activity and adopt bad habits like smoking, drinking and consumption of illicit drugs. Thankfully, the prevalence of smoking and alcohol intake is low in the present study. The prevalence of current use of tobacco in any form was 1.1% compared to 5% in a study conducted under similar setting in Massachusetts, USA.[17] However, the prevalence of ever user of alcohol is a cause of concern. Out of four ever drinkers, three were continuing drinking. The prevalence of overweight in the present study is 20.7%, which is way ahead than 11.7% as reported by a similar study in another medical college of Delhi during 1998-2001.[18] The increased prevalence in the present study may be due to change in lifestyle of people over the last decade and different methods of determining overweight. The prevalence of overweight was almost similar (17.5%) in a study conducted among medical students conducted in West Bengal.[19] The percentage of students admitted through all India entrance examination is less than allotted 15% of all seats. This less number of students admitted in the college may be due to low interest in the medicine course by youngsters.

The study provides some insight into the sociodemographic background of medical students which has never been explored before in India. Compared to boys, girls' parents were more educated, indicating that educated parents encourage their daughters to study. Also, fewer girls belonged to reserved category (15% versus 85% boys) suggesting education among girls is still not much prevalent in backward classes.

For assessing physical activity, students were asked to choose among these levels of activities per day: ≤30 min, 31 to 60 min, 61 to 120 min and more than 120 min. More than 40% of students were doing physical activity of less than or equal to 30 min in a day. They were spending more than one-and-a-half hour in a day watching TV and playing computer games. Increased competition and vast syllabus may be the reasons for their inability to go out and play. More than one-thirds of the girls were suffering from truncal obesity based on their WHR measurements. Yoga and meditation have not become common among adolescents yet. The dietary habits of the students seem good; they eat fruits and green leafy vegetables on an average 5 days a week. The average intake of fast foods like cold drinks, chips and fries is around 1.5 days per week.

To conclude, overweight and central adiposity is more common among adolescents and young medical students. Time spent in doing vigorous physical activity is less. Similar studies should be done among different medical colleges of India and based on the findings, intervention measures can be adopted to suit the local need. This will not only benefit these medical students but also the society at large.

Conflict of Interest: Nil

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Date of Submission: 31st Jan. 2016

Date of Acceptance: 23rd Feb. 2016