

Interrelationship between Sedentary Lifestyle and Obesity among Medical Students

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ABSTRACT

BACKGROUND

Students undergoing MBBS course are all the time very busy in their studies, they hardly get any time for exercise. Sedentary habits and shift to western lifestyle and fast food culture has led to overweight and obesity. This study was done to determine the prevalence of overweight and obesity among the first year MBBS students of batch 2016-17.

METHODS

The present study was carried from June to August 2017 among 200 first year MBBS students of Govt. Medical College, Amritsar of Punjab.

RESULTS

Prevalence of overweight and obesity was 22.5% and 15.5% respectively. Boys are more overweight 24.51% and obese 25.49% than girls 20.41% and 5.10% respectively.

CONCLUSIONS

The present study concluded that obesity is prevalent in first year MBBS students and causes are faulty eating habits and lack of regular exercise.

KEYWORDS

Overweight, Obesity, Medical College, MBBS Students

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DOI: 10.18410/jebmh/2019/666

*Financial or Other Competing Interests:
None.*

How to Cite This Article:

*Kaur N, Kaur S, Singh S. Interrelationship
between sedentary life style and obesity
among medical students. J. Evid. Based
Med. Healthc. 2019; 6(51), 3175-3178.
DOI: 10.18410/jebmh/2019/666*

*Submission 11-11-2019,
Peer Review 14-11-2019,
Acceptance 29-11-2019,
Published 20-12-2019.*



BACKGROUND

Students opting for medical stream from 9th standard remain indoor all the day busy in coaching classes. They never get time for outdoor activities and exercise. They develop habit of sitting in comfortable environments, AC fitted room and get whatever they demand from parents. This sedentary and easy going style become their permanent life style. As said health is wealth, physical fitness is a general health well-being, which is achieved through proper nutrition, moderate to vigorous physical exercise and sufficient rest.^{1,2} Lack of exercise and outdoor activities leads to overweight and obesity.^{3,4,5}

Obesity is a lifestyle disease defined as an abnormal growth of adipose tissue leading to an enlargement of fat cells size or increase in fat cell number or combination of both. Overweight and obesity is rapidly growing threat in countries and is one of the most serious public health problems.^{6,7}

Even World Health Report 2009, introduced the term "Risk Transition" for referring to changes in pattern of nutrition, alcohol consumption and other life styles.⁸ At the same time, changes in living and working pattern has led to less physical activity and physical labour. The people spend many hours sitting with no physical activity in the front of television and computers, thus leading to overweight and obesity among adolescents.

Recent epidemiological studies have revealed that the prevalence of obesity, overweight and metabolic syndrome in Iran⁹ is equal to or higher than Europe and United states explaining Panglobal problem. Obesity is responsible for causing various diseases such as diabetes mellitus type-2, hypercholesterolemia, hypertension, myocardial infarction and certain cancers.^{10,11}

METHODS

The present study was carried at Govt. Medical College, Amritsar, Punjab in which 200 MBBS student of 1st year participated. All medical students were briefed about the rationale of the study. Questionnaire proforma were filled and written consent taken of each student. The students were assured that information provided by them in the form of name, identify and data would not be disclosed at any time except the principal investigator. Anthropometric parameters like height in centimeters and weight in kg were taken, and BMI was calculated by QUETELET Index. Weight and height were measured by standardized weight machine and measuring tape.

$$\text{BMI} = \text{Weight in Kg/Height in m}^2$$

The formula of BMI was devised in 1830 by Belgian Mathematician Adolphe Quetelet. BMI is universally expressed in Kg/m² for males and females.

RESULTS

Out of total 200 students 18-23 years of age (20.43±0.89), 102 were male (51%) and 98 (49%) were female. Regarding their BMI, students have been divided into four groups as follows:

- i) Underweight - BMI less than 18.5
- ii) Normal - BMI between 18.5-24.9
- iii) Overweight - BMI between 25-29.9
- iv) Obese - BMI more than 30

Table 1 shows, 18(9%) students are underweight, 106 (53%) students are normal, 45 (22.5%) students are overweight and 31 (15.5%) students are obese. Regarding sex differences in males and females, 18 (9%) students of which 6 males (5.88%) and 12 females (12.24%) are under weight, of the total 106 students (53%) 45 males (44.12%) and 61 females (62.24%) are of normal weight, 45 students (22.5%), of which 25 males (24.51%) and 20 females (20.41%) are overweight and of 31 obese, 26 males (25.49%) and 5 females (5.10%) as shown in table 2. Table 3 shows weight, height and BMI, p-value less than 0.05 and is highly significant.

Weight	No.	%
Under weight (<18.5)	18	9.0
Normal (18.5-24.9)	106	53.0
Overweight (25.0-29.9)	45	22.5
Obese (>30)	31	15.5
Total	200	100.0

Table 1. BMI of Students

BMI	Sex				Total	
	M (n=102)		F (n=98)		No.	%
	No.	%	No.	%		
Under Weight (<18.5)	6	5.88	12	12.24	18	9.00
Normal (18.5-24.9)	45	44.12	61	62.24	106	53.00
Overweight (25.0-29.9)	25	24.51	20	20.41	45	22.50
Obese (>30)	26	25.49	5	5.10	31	15.50
Total	102	100.0	98	100.0	200	100.0

Table 2. Gender Variation in BMI

Variable	Underweight (n=18)	Normal (n=106)	Overweight (n=45)	Obese (n=31)	p
Weight (kg)	47.67	60.16	73.97	82.22	0.00
Height (mt)	1.19	1.50	1.85	2.05	0.00
BMI (Kg/m ²)	17.51	21.85	27.31	33.86	0.00

Table 3. Association of Anthropometric Characteristics with BMI

DISCUSSION

It was observed that most of students were of normal BMI. Overweight and obesity was 22.5% and 15.50% respectively (table 1), boys are more overweight 24.51% and obese 25.49% than girls overweight and obese (20.41% and 5.10%) respectively. Similar study was conducted by Amit Ghosh et al at R. G. Kar Medical College, West Bengal on 148 students and found overweight 25.6% and obese 6%.¹²

Similar results were found in study done by Gupta¹³ et al (overweight 17.5% and obesity 3.4%) among undergraduate medical students, Medinipur, West Bengal in 2007, it is cross sectional study on obesity among first year MBBS students of Nijalingappa Medical College, Bagalkot, Karnataka in 2013 and obesity 3.38% of total 148 students.¹⁴

In a community based cross sectional study done by Hussain et al,¹⁵ overweight 13.22% and obesity 6.8% in 2009 and Bansal et al¹⁶ (overweight 14.93% and obesity 5.69%) in 2013. Sidhu¹⁷ et al found (overweight 10.94% and 5.62%) in their study among adolescent students of Amritsar, Punjab. In our, study the prevalence of overweight and obesity is 22.5% and 15.5% which is quite high as compared to other studies. It is generally due to Punjabi, life style, where people take more of Ghee, sugar and salted diets which is responsible for overweight and obesity in students. The students are busy in sedentary activities like watching TV, usage of mobile and internet. The easy life style of sitting and sleeping in air conditioned room and avoiding going outside for jogging and walking to avoid in natural weather. Health-related quality of life (HRQOL) has been increasingly used as a health outcome among children and adolescents to assess their physical and social functioning, mental health and well-being, and to evaluate population-based intervention programs.¹⁸ HRQOL is a multidimensional construct that covers physical, psychological, and social health and hence represents overall health of an individual.¹⁹ Assessment of health related parameters among children and adolescents is important in identifying subgroups with poor health status and in guiding effective intervention strategies to improving health of the younger population. The association between physical activity and health in children and adolescents has been mainly investigated among those with chronic disease conditions such as obesity, asthma and cancer.²⁰⁻²³ These studies have reported that children and adolescents who undertake an active lifestyle experience better quality of health than their peers who engage in an inactive lifestyle. In the general population, the relationship between physical activity and quality of health has been well investigated in adults²⁴ relative to children and youth (e.g., school or population-based samples). Moreover, much less is known about the relationship between sedentary behaviour and health parameters. So our study targets that group and can give advice to the students to improve their health and various parameters related to health.

CONCLUSIONS

Non-participation in outdoor games, lack of exercise and easy lifestyle, ultimately lead to chronic diseases like DM, hypertension, asthma and cardiac diseases. Students need regular exercise, yoga and proper sleep for fitness. Periodic screening and regular physical exercise in such students should be encouraged. This study reinforces the need to promote healthy life style, good dietary habits, regular use

of fresh seasonal vegetables and fruits. So, lifestyle change is required to keep them physically and mentally fit. Otherwise they are prone to get life style diseases like early cardiac diseases, HT, DM, asthma, gall bladder and certain cancers. Future research is needed to identify potential causal mechanisms for these relationships. More longitudinal and cluster-randomized controlled trials are required to assess the dose-response effect of physical activity and sedentary behaviour on health of students. This will help justify school health intervention efforts promoting active lifestyle, reducing sedentary behaviours to enhance quality of life of the young population. The findings in this review may be used as an evidence to inform primary prevention and public health policy for promoting the health of children and youth.

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