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Studying the effect of sedentary lifestyle in undergraduate medical students

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ABSTRACT

Background: Medical Students because of their prolonged study hours are more prone to sedentary lifestyle that exposes them to obesity. In addition to these factors, westernization of food preferences of the students also makes them prone to obesity.

Aim and objective: This study was done to know the prevalence of overweight and obesity among the first year MBBS students of batch 2016-17.

Methods: The present study was carried from June-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.

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

Keywords: Overweight, Obesity, Medical College,MBBS students.

INTRODUCTION

Medical students have a long road to education. As soon as they opt for the medical branch, sometimes as early as 9th standard, they are doomed to sit for long hours of studying. In the midst of their busy schedule of coaching classes and self-study, they get little time to be at home and many of them leave their home to pursue this subject somewhere else. All of these factors precipitate a lifestyle that results in a sedentary lifestyle and bad eating practices. 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].

For all the changing patterns in the new age lifestyle, in their report in 2009, WHO introduced a new term called "Risk Transition"[8]. These mentioned changes in living and working pattern has led to less physical activity and physical labour. Thus, spending many hours sitting with no physical activity in the front of television and computers, has lead to overweight and obesity among adolescents.

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As per the data shown by World Health Organisation, obesity has nearly tripled since 1975 globally. In 2016, more than 1.9 billion adults aged 18 years and older were overweight. Of these over 650 million adults were obese[9]

Obesity is responsible for causing various diseases such as diabetes mellitus type-2, hypercholesterolemia, hypertension, myocardial infarction and certain cancers[10,11].

MATERIAL AND 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.

BMI=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/m^2 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 I 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 61females (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 1: BMI OF STUDENTS

Weight	No.	%age
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 2: Gender variation in BMI

BMI	Sex				Total	
	Male (n=102)		Female (n=98)		No.	%age
	No.	%age	No.	%age		
Under weight (<18.5)	6	5.88	12	12.24	18	9.00

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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 3: ASSOCIATION OF ANTHROPOMETRIC CHARACTERISTICS WITH BMI

Variable	Underweight (n=18)	Normal (n=106)	Overweight (n=45)	Obese (n=31)	p-value
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 shows weight, height and BMI, p-value less than 0.05 and is highly significant.

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 Gupta[13] 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 al[16] (overweight 14.93% and obesity 5.69%) in 2013. Sidhu[17]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 adults[24,25,26] relative to children and youth (e.g.,school or population-based samples). But, due to minimal

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physiological studies on the exact effect of sedentary behaviour on health parameters, our study targets a sedentary group so that we can advise the students to improve their health and various parameters related to health.

CONCLUSION

The major conclusion drawn from present study is that non-participation in outdoor games, lack of exercise and easy life style, ultimately in future they become victims of chronic diseases like DM, hypertension, asthma and cardiac diseases.The students must take 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 healthylife style, good dietary habits, regular use of fresh seasonal vegetables and fruits. So life style change in almost 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 behavior on health of students. This will help justify school health intervention efforts promoting active lifestyle, reducing sedentary behaviors 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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