

Prevalence of Overweight / Obesity among the Medical Students, Malaysia

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SUMMARY

Background: Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Body mass index is a simple index of weight-for-height that is commonly used in classifying overweight and obesity in adult populations and individuals.

Objectives: A study was conducted to screen the medical students of AIMST University for overweight/obesity using Body Mass Index (BMI) and to determine the prevalence among them. **Materials and methods:** This is an institution based cross sectional study was conducted among 290 medical students using a pre-tested questionnaire and measured their Body Mass Index (BMI). Data obtained was analyzed statistically by calculating proportions.

Results: Out of 290 students who participated in the study, 45.2% were males. In the study, 14.8% were found to be overweight (BMI 23-24.9kg/m²); 13.7% of males and 15.7% of females. Pre-obese students (BMI 25-29kg/m²) accounted for 15.9% of the total (males 18.3% and females 13.8%). 5.2% were found to be obese (BMI >30kg/m²): males 9.2% and females 1.9%. Also 14.8% were found to be underweight (males 12.2% and females 17.0%). The study group consisted of 63.8% Indian, 32.4% Chinese and 3.8% Malay students.

Conclusions: The study reveals that the prevalence of overweight and obesity among the medical students of AIMST University is on the high, which is comparable to the findings of earlier studies conducted in Malaysia, reinforcing the need to encourage healthy lifestyle, healthy food habits and a physically active daily routine, among the adolescents and youth of this country.

KEY WORDS:

Overweight, Obesity, Body mass index, Medical students

INTRODUCTION

Obesity is a life-style disease that affects nearly one-third of the adult population. The number of overweight and obese people has continued to increase since 1960's a trend that is not slowing down. Obesity increases one's risk of developing conditions such as high blood pressure, diabetes (type 2), heart disease, stroke, gallbladder disease and cancer of the breast, prostate and colon. The tendency toward obesity is

fostered by our environment: lack of physical activity combined with high-calorie, low-cost foods¹. According to the World Health Organization, there are over 300 million obese adults and 1.1 billion overweight people worldwide. Currently two conditions co-exist, with half of the world's population underweight and the other half overweight¹. Environmental and behavioral changes brought about by economic development, modernization, and urbanization has been linked to the rise in global obesity. Obesity is associated with more than 30 medical conditions and scientific evidence has established a strong relationship with at least 15 of those conditions. According to a recent study by the RAND organization, obesity is more damaging to health than smoking, high levels of alcohol drinking and poverty². Obesity is increasing in children and adults, and true health consequences may become fully apparent in the near future. Weight loss of about 10% of body weight, for persons with overweight or obesity, can improve some obesity related medical conditions including diabetes and hypertension when intervened at the earliest. This study was designed to determine the magnitude of the problem in a microscopic level, since the target population identified for the study is representing the youths and young adults of this country. The study was conducted to determine the prevalence of obesity among the medical students at AIMST University and also to create awareness among the medical students & the general public about the health effects of overweight / obesity which included preventive strategies.

MATERIALS AND METHODS

This institution based cross sectional study was conducted among the medical students in the age group of 19 to 25 yrs of AIMST University from the peninsular Malaysia. It was decided to collect information from all 420 students studying in the University but only 290 students were available in the campus during the study period. Therefore only 69% of the students were included in the study. After getting permission from the University authorities, the students were briefed about the questionnaire and a written consent was obtained where confidentiality was assured in all aspects. A pre-designed pre-tested questionnaire is used to collect the data such as age, gender, ethnic origin and their present weight in kilograms and height in meters. Students were given instructions on how to measure the weight and height correctly. BMI is calculated by dividing a person's body weight in kilograms by their height in meters squared (weight

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Table I: Reported cases of conus GBM

Classification	BMI (kg / m ²)	Male		Female		Total	
		No	%	No	%	No	%
Underweight	< 18.4	16	12.2	27	17.0	43	14.8
Normal weight	18.5 - 22.9	61	46.6	82	51.6	143	49.3
Overweight	23.0 - 24.9	18	13.7	25	15.7	43	14.8
Pre - Obese	25.0 - 29.9	24	18.3	22	13.8	46	15.9
Obese	> 30	12	9.2	3	1.9	15	5.2
Total		131	100.0	159	100.0	290	100.0

Table II: ethnic origin wise distribution of BMI among medical students

Classification	Ethnic origin						Total	
	Indian		Chinese		Malay			
	No	%	No	%	No	%	No	%
Underweight	31	16.7	12	12.7	0	0	43	14.8
Normal weight	83	44.9	53	56.4	7	63.6	143	49.3
Overweight	27	14.6	14	14.9	2	18.2	43	14.8
Pre - Obese	32	17.3	12	12.8	2	18.2	46	15.9
Obese	12	6.5	3	3.2	0	0	15	5.2
Total	185	100.0	94	100.0	11	100.0	290	100.0

[kg] / height [m]²) used to determine adiposity of the body. A BMI of 30 or more is considered obese, a BMI of 25.0 - 29.9 is considered Pre-obese and a BMI 23 to 24.9 is considered overweight/pre-obese³. The measurements were taken under the supervision of supervisors using a standardized weighing machine and a height measuring scale which was available in the Research laboratory of the Medical School. Followed by the data collection the students were educated by an IEC tool by the investigators in groups about the ill effects of overweight and obesity, their risk factors and the ways of preventing them. Also community programs were arranged by the investigators utilizing the medical students to spread the information about the health effects of overweight and obesity along with the prevention strategies. Data obtained was collated and analyzed statistically by proportions, 95 % confidence intervals by using standard error of proportion and tests of significance by both standard error of proportion and standard error of difference between two proportions.

RESULTS

A total of 290 medical students participated in the study and the age range of the students is from 19 to 25 years and the majority was females (54.8 %). Out of the study population, obesity was found in 15 (5.2%) individuals, pre-obese among 46 (15.9%) and overweight among 43 (14.8%). Nearly half of the medical students were found to be in normal weight [Table I]. Though the proportion of overweight is higher among females (15.7%), proportion of pre-obese and obesity was higher among males which are 18.3% and 9.2% respectively.

When the ethnic distribution of the study population was examined, Indians (n=185) were found to be highest in number, followed by Chinese (n=94) and then Malays (n=11). Obesity was higher among Indians (6.5%), whereas pre-obese (18.2%) and overweight (18.2%) was higher among Malays. Also none of the Malay medical students were identified as obese (Table II).

DISCUSSION

In our study when the overweight group and the pre-obese group are combined, they account for 30.7% of the study population, which is much higher than the findings of other studies conducted earlier in Malaysia. However, the prevalence of obesity (5.2%) in our study population shows a similar trend shown in the earlier studies. Ismail MN et al mentioned in his study that the prevalence of obesity was greater in women than in men. The National Health Morbidity Survey data reveal that in adults, 20.7% were overweight and 5.8% obese⁴.

Another population-based cross-sectional study conducted in Malaysia showed that the overall national prevalence of obesity among Malaysians aged 15 years old and above was 11.7%. The prevalence of obesity was highest amongst the Malays (13.6%) and Indians (13.5%) followed by the indigenous group of "Sarawak Bumiputra" (10.8%) and the Chinese (8.5%)⁵. Our study finding shows that prevalence of obesity was more among medical students with Indian ethnic origin (6.5%) than other ethnicity which may be due to the denominator being high with Indians.

Boo NY *et al* conducted a study to determine the prevalence of obesity among medical students in a private medical school in Malaysia and found, similarly, that 30.1% of the students were overweight or obese, Malays and Indians were more obese than the Chinese and unlike the national data, a significantly higher proportion of the male students were found to be overweight⁶. This was found to be similar with our study population.

A study conducted in West Bengal in India among undergraduate medical students showed an overall prevalence of overweight 17.5% and prevalence of obesity was 3.4%⁷. Another similar study by Chhabra et al. reported a prevalence of 11.7% overweight and two per cent obesity among medical students of Delhi⁸. In a study conducted in Kelantan by the Department of Medicine, University Sains

Malaysia, out of 2,284 subjects over 20 years old, the overall prevalence of overweight and obesity was 21.3% and 4.5% respectively⁹. Another study measured the body mass index (BMI), and assessed attitudes and knowledge about obesity, of 197 male and 217 female patients aged 20-59 years attending the primary care clinic of the University Hospital in Kelantan, Malaysia where obesity was higher among female patients¹⁰.

Thus on comparing the studies conducted in medical students of Malaysia and other regions of the world, the overweight and obesity when accounted as a single entity seem to be higher in our study population. As a new finding, in our study the ethnicity of being Indian showed more risk compared to other reported studies conducted among medical students of Malaysia. Also male medical students were facing more risk of being obese in our study population compared to other studies throughout world where females were proportionately more obese than males.

CONCLUSION

This study reveals that the prevalence of overweight and obesity among the medical students of AIMST University is high, and comparable to the findings of earlier studies conducted in Malaysia. Another finding of this study is the sizeable proportion of students who are underweight among the medical students, particularly among the female students. The underweight problem among the study population is an indication of growing extremes of the double edged problem of increasing number of obese and underweight people in Malaysia. This aspect has not been assessed in earlier studies. Thus the study reinforces the need

to encourage healthy lifestyles, healthy food habits and a physically active daily routine, among the adolescents and youth of this country, so that the dangers of the risks of developing chronic degenerative diseases earlier in life can be prevented. Also the findings of the study helped us to modify and enhance the IEC strategy to intervene the students at risk and promoting the students with existing healthy life style.

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