Assessment of Body Mass index (BMI) in Medical Students (A cross sectional Survey)

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Background: Obesity is nutritional imbalance and it is under the influence of environmental and genetic factors, increase in high-energy intake and a reduction in physical activity. All overweight and obese are at risk for hypertension, high blood cholesterol, type 2 diabetes, coronary heart disease, etc. Unfortunately obesity is increasing in modern world and this is reported by many researchers. This rising magnitude of the problem mandates population-level intervention. For which a quality data is needed. This study was conducted to fill this knowledge gap for designing a suitable preventive strategy. **Objectives:**-To know the etiological factors in the area, to formulate a public awareness and intervention programme for reduction in mortality and morbidity due to obesity in Pakistan **Study design:**-Cross sectional survey **Place and duration of the study:** - KEMU June to July 2006.Respondants and methods:-Pre- tested questionnaire was used to interview the 4th yr MBBS students **Results:** Although obesity is present in some students but, surprisingly the percentage of students who were under weight was more than the over weight /obese. Obesity is significantly more in economically well students, whereas under wt. students belong to all the economical classes **Conclusion:** Economical prosperity and sedentary life style are the most important suspected causes of obesity where as low wt. trend was either due to fashion of looking smart or due some awareness. Awareness programme are the best feasible approaches for rectification of the situation for neither being over- weight nor under wt.

Key words: Body Mass Index, Determinants

Obesity is a medical condition due to excess accumulation of body fat and it is due imbalance between intake-outtake of calories. Although the etiology of obesity is under the influence of environmental and genetic factors. but recently, increase in high-energy foods intake and a reduction in physical activity are becoming the important factors. In children along with these factors, prolonged television viewing, playing computer games are further aggravating the condition[1,2]. All overweight and obese adults are considered at risk for developing associated diseases such as hypertension, high blood cholesterol, type 2 diabetes, coronary heart disease, sleep apnoea, orthopedic problems, fertility problems in females and other diseases[3]. Unfortunately this weight gain is reaching epidemic proportions in modern world and this rising trend is reported by many researchers, e.g. the prevalence of obesity have doubled in Australian adults in the decades from 1980 to 2000 (7.1% to 18.4%), the increase is even more striking among children (from 10.7% to 19.5% in boys and from 11.8% to 21.1% in girls)[4]. In American population it was13% in 1962, 15% in 1980, 23% in 1994 and unprecedented 31% by 2000[3]. Turkey has shown the prevalence of obesity 23.5% (29.4% in women and 16.5% in men)[5]. In Pakistan it is 14%[6]. A statistically significant increase in mean BMI (1.4 kg/m^2) was reported between 1957 and 1994 in all major regions of the developing world, although the size of the increase varies across regions[7].

This rising magnitude of the problem mandates population-level intervention[8]. There is a need to produce an environment that supports healthy eating and physical activity throughout the community. but no quality epidemiological data is available about problem in Pakistan This study was conducted to fill this knowledge gap for designing a suitable preventive strategy. Body mass index (BMI) in medical students was observed, because they represent that segment of population which because of heavy educational load adopt sedentary habits, so that on the basis of findings a suitable preventive strategy can be designed and implemented

Materials and methodology

This institution based cross sectional survey was conducted in KEMC, Lahore. Fourth year MBBS class was selected. A questionnaire was developed in keeping with the study objectives and questions were directed at finding the socio demographic status of the students. Obesity was assessed by the body mass index [BMI] (weight in kilograms divided by the square of height in meters). Males with a BMI of < 20.1 were considered under wt, 25 to 29.9 were considered overweight and those with a BMI >30 were considered obese. Similarly females with a BMI of <18.7 were considered under wt., 23.9-28.6 were considered overweight, while those with a BMI >28.6 were considered obese[9]. Epi Info and SPSS computer software were used for analysis of the data.

Results

	Total	Over Wt. %	Normal Wt. %	Under Wt. %
Age				
21 yr or less	98	08	65	27
22 yr or more	109	10	72	18
Sex				
Male	90	13	67	20
Female	117	06	70	24
Accommodation				
Boarder	121	08	71	21
Non boarder	86	10	66	24
Residential status				
Urban	179	09	69	22
Rural	28	08	71	21
Residential zone in Punjab				
North	32	03	78	19
Central	129	11	62	26
South	32	03	81	16
Out of Punjab	11	18	64	18
Income per capita				
Rs.4000/- or less	57	05	74	21
Rs.4000/- or more	150	10	68	22
Family size				
5 or less	75	13	70	17
6 or more	132	07	68	25

Discussion

Overall obesity in this study population is 9.1%, whereas the other studies conducted locally and abroad are showing figures of more than 14%. Although there appears a difference of 2-3 % due to the impact of different demographic factors (e. g. age, sex, urban/rural difference, hostel living), but all the factors have statistically non significant effect , only income per capita have shown a statistically significant effect on percentage basis at $p<.05$[10,11,12,13].

Within Punjab, higher prevalence is seen in students belonging to areas of central Punjab, but still higher prevalence is observed in students from out side Punjab. May be they belong to financially better families.

Surprisingly the findings of the study are not in line with the present local as well as world wide trends of increase in prevalence of obesity, shown by different workers[10,11,12,13,14]. Rather the percentage of students who are under weight is higher (about 20%) than that of over weight / obese (9.1%)and this trend is almost same irrespective of age, sex, accommodation and income per capita . only family size is having a small difference. The only reason which appears is firstly these were 4th yr students and long stay in hostels might have affected the intake and secondly might be being the medical students they have started caring themselves.

Conclusion

The percentage of under wt. in medical students is higher than the over wt. / obese. Increasing awareness and fashion trends looks to be the important factors for this trend. Awareness is needed to be created in all community for having normal wt. (neither over wt. nor under wt.)

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