

## Dietary habits and life style among the students of a private Medical University Karachi

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### Abstract

**Objectives:** To determine the dietary habits and life style of the students of a private medical university in Karachi.

**Methodology:** A cross-sectional study was conducted at Baqai Medical University, from August 2005 to September 2005. A total of 384 medical students from the batches of 2002 to 2005 participated in this study. A pre-tested semi structured questionnaire was self administered to the students after taking their consent. The data included socio-demographic characteristics, life style, exercise, dietary habits and family history of diabetes mellitus. The collected data was analyzed by statistical program SPSS version 11.

**Results:** Out of the total participants, 53.4% were male and 46.6% were female students. The mean age was  $20 \pm 1.58$  years. The average income of the household of students was 50,000 Pakistani rupees per month. Only 7% students were tobacco users. About 33% students had a history of diabetes mellitus among their parents. Nearly ninety-seven percent reported consumption of junk food while 60% reported use of whole grain food in their diet. Seventy percent students walked 30 minutes and 47% exercised daily. According to the body mass index, 58.3% students were of normal weight and 41.7% were overweight. No significant difference was found among male and female students when dietary habits and life style were compared by sex. Junk food and soft-drink consumption was associated with being overweight. Eating whole grain food and doing exercise showed a protective association against overweight.

**Conclusion:** Unhealthy lifestyle and poor dietary habits were highly prevalent in the overweight study population. Type-2 diabetes mellitus was common among parents and grandparents of the students making them prone to this disorder. Our study concluded that dietary and exercise counselling is necessary as a preventive strategy (JPMA 59:98; 2009).

## Introduction

The rapid increase of overweight and obesity especially in the younger generation, in many low and middle-income countries due to inappropriate diet and inactive lifestyle, foretells the overwhelming chronic disease burden in the next 10 to 20 years, if no intervention is done.<sup>1</sup> Among the Asians, obesity has been linked with the metabolic syndrome like type-2 diabetes mellitus.<sup>2</sup> A study from India reported increasing prevalence of obesity and its associated risk factors in an urban population.<sup>3</sup> Approximately 80 percent of heart diseases, stroke, and type-2 diabetes and 40 percent of cancer could be avoided through a healthy diet, regular physical activity and avoidance of tobacco use.<sup>4</sup> The onset of type-2 diabetes in younger age groups is likely to result in major economic burden all over the world due to premature ill health and death. In China the incidence of diabetes among the young age group from 7 to 18 years who were obese and overweight had increased 28-fold between 1985 and 2000. Furthermore, the age at which type-2 diabetes develops has also declined, and the prevalence of the disease in children and adolescents has risen.<sup>5</sup> This warning has come when public health experts are fighting against the battle of increasing urbanization in Asia to change the new lifestyles and food habits in order to stall the spread of the disease. The high consumption of fast foods, snacks and drinks high in sugar are equally bad for health. Thailand ranks among one of the highest rates of adult obesity in Asia due to a combination of a sedentary lifestyle and high consumption of foods packed with sugar and little nutrients.<sup>5</sup> A study conducted in Finland showed that reduction in the incidence of Type-2 diabetes was directly associated with changes in lifestyle, especially in the high-risk subjects.<sup>6</sup> This study was carried out to determine the diet pattern and life style of medical students of a private medical university in Karachi.

## Methods

A cross-sectional study was conducted at Baqai Medical University from August 2005 to September 2005. For calculating the sample size, the frequency of being overweight, lack of physical activity and dietary habits was taken as 50% estimated proportion of students. The level of significance ( $\alpha=0.05$ ) and bound of error was 5% (deviation from the actual value). The estimated sample size calculated for the given proportion, 50% at 95% confidence interval was 384. The simple random sampling technique was utilized to achieve the required sample size. The list of total students of batches 2002-2005 was obtained and a random number table was generated for the roll numbers to be selected in the study to meet the required sample size. A pre-tested semi-structured questionnaire was self administered to the students with their consent. The socio-demographic data was collected on life style, tobacco

consumption (cigarette, pan tobacco and tobacco use in any other form), exercise that includes half an hour walk daily or moderate exercise 5 days a week, dietary habits, family history of diabetes mellitus and junk food (a high calorie food tastes good seems attractive and low in nutritious value) consumption that included burgers, pizza, rolls, french fries, samosaz, patties and brownies. The collected data was analyzed by using statistical program SPSS version 11. Odds ratio with 95% confidence interval was calculated to determine the association between dietary and life style variables with sex and body mass index (BMI).

## Results

The study subjects included 53.4% males and 46.6% females. The majority (97.4%) of students were Pakistani nationals while 2.6% were foreigners. Among the Pakistanis, 76.3% belonged to Sindh, 13.3% Punjab, 1% Balochistan, 6.8% NWFP. Absolute majorities (99.5%) were Muslim students and only 0.5% were non-Muslims. Out of the total, 95.6% were unmarried and 4.4% were married. The mean age of the students was  $20 \pm 1.58$  years. The average income of the household of students was 50,000 rupee per month. Seven percent students consumed tobacco. About 33% had a history of diabetes mellitus in parents, 30% in grand parents and 2% among their sisters and brothers. Regarding dietary habits, 60% students were having whole grain food and the majority (96.4%) were eating junk food and 72.4% were taking cold drink daily. Regarding exercise practices, 70% walked 30 minutes or more in a day and 47% had moderate exercise. According to body mass index, 58.3% were of normal weight and 41.7% were overweight.

Table 1 describes the association of dietary habits and life style among the respondents by sex. No significant association was found when age, income, body mass index and family history of diabetes mellitus, dietary habits including whole grain consumption, cold drinks, junk food and life style habits as exercise were compared among the males and female students.

Table 2 describes the association of body mass index with the dietary habits and life style characteristics. No association was observed when age, sex and income were compared with body mass index. Junk food consumption was associated with being overweight four times as compared to those who did not consume junk food (OR=4.47, 95% CI=0.93-29.5). Similarly, those who were consuming cold drinks were found more overweight as compared to those who did not (OR=1.6, 95%CI=0.99-2.57). Subjects not taking whole grains in diet were observed to be overweight compared to those who were not (OR=1.75, 95%CI=1.13-2.72). Students not exercising regularly were more likely to be overweight as compared to those who did exercise (OR=0.43, 95% CI=1.13-2.75).

**Table 1: Dietary and life style characteristics by sex of respondents (n=384)**

	Male n=205	Female n=179	Odds Ratio	95% Confidence Interval (95% CI)
BMI	107 98	117 62	0.18	(0.03-0.87)
Age in years				
<20	84	96	0.60	(0.39-0.92)
>20	121	83		
Income (in rupees)				
<50000	138	117	1.09	(0.70-1.71)
>50000	67	2		
Junk food				
Yes	193	177	0.18	(0.03-0.87)
No	12	2		
Cold drink consumption				
Yes	155	123	1.41	(0.88-2.27)
No	50	56		
Family history of diabetes				
Yes	57	68	0.63	(0.40-0.99)
No	148	111		
Exercise				
Yes	93	73	1.21	(0.79-1.85)
No	112	106		
Whole grain consumption				
Yes	126	108	0.10	(0.04-0.24)
No	79	7		

**Table 2: Dietary and life style characteristics by body mass index (BMI) (n=384).**

Variables	Overweight n=160 BMI >25	Normal n=224 BMI <25	Odds Ratio	95% Confidence Interval (95% CI)
Gender				
Male	107	98	0.58	(0.37-0.89)
Female	117	62		
Age in years				
<20	76	104	1.04	(0.68-1.60)
>20	84	120		
Income (in rupees)				
<50000	101	154	0.78	(0.50-1.22)
>50000	59	70		
Junk food				
Yes	158	212	4.47	(0.93-29.5)
No	1	13		
Cold drink consumption				
Yes	171	107	1.66	(0.99-2.57)
No	53	53		
Family history of diabetes				
Yes	164	95	1.59	(1.01-2.43)
No	65	60		
Exercise				
Yes	75	91	0.43	(0.28-0.67)
No	143	75		
Whole grain consumption				
Yes	75	75	1.75	(1.13-2.72)
No	85	149		

## Discussion

Regardless of predisposing factors, diet and lifestyle have a great influence on morbidity and mortality in life. Due to the cumulative effect of adverse factors throughout life of an individual, it is particularly important to adopt a healthy diet and lifestyle practice. This study assessed the dietary habits and life style of medical students, who represent a significant community of future health practitioners. Improvement in life style if made early in life and during medical schooling would produce physicians practicing and promoting healthy diet and active life style. A need for improvement is required in health seeking behaviour of medical students. Family history of diabetes, physical inactivity and inappropriate dietary habits along with overweight students were alarming signs reported in our study while a low prevalence of tobacco consumption was noted. Similar findings have been reported in United Arab Emirates where 24% of medical students were overweight or obese with 77% having insufficient physical activity levels and 50% unhealthy dietary habits.<sup>7</sup> Another study conducted at Aga Khan University on medical students, reported that 33% had a family history of CHD, 28% exercised regularly, 9% were overweight and 8% reported smoking.<sup>8</sup> The physical activity guidelines recommend moderate physical activity for at least 30 minutes preferably daily.<sup>9</sup> Two American studies have reported much more regular exercise and a higher prevalence of smoking among students as compared to our study.<sup>10,11</sup> Our study also found no difference between male and female students' dietary habits. On the contrary, a few studies have reported that females were more conscious of their diet and found underweight as compared to male students.<sup>8,11-14</sup> Junk food, cola consumption and physical inactivity were identified as the main cause for being overweight. This along with genetic predisposition leads to the onset of diabetes. Americans are getting nearly one-third of their calories from junk foods; soft drinks, sweets, desserts, alcoholic beverages, and salty snacks.<sup>15</sup> This dietary habit is prevalent in our youngsters both males and females, despite knowing its harmful effects. It is a known fact that a healthy diet containing fiber and exercise can prevent obesity and chronic diseases. Our study had similar results showing that obesity was observed in students having high calorie junk food. Family history being associated with diabetes has also been reported in other studies from Pakistan.<sup>16,17</sup> The results from previous studies done in Sweden and China also provide evidence that changes in lifestyle are effective in preventing diabetes.<sup>18,19</sup> The results of our study also calls for intervention regarding diet and exercise among the future physician population.

## Conclusion

The dietary habits and life style of medical students were not healthy; junk food and cola consumption was high with predominance of overweight and physical inactivity. Type-

2 diabetes mellitus was common among parents and grandparents of the students. Dietary and exercise counselling is required as a preventive strategy for this group.

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