MEDICAL CHANNEL

Original Article

SELECTION OF ACTIVE LIFE STYLES BY MALE / FEMALE HEALTHY YOUNG MEDICAL STUDENTS

1. **SAIF ULLAH SHAIKH**
2. **REHANA REHMAN**
3. **LUBNA EZDI**
4. **ZEENAT SHAHEEN**

1. ***Lecturer***
   Bahria University Medical & Dental College, Karachi.
2. ***Assistant Professor***
   Department of Physiology
   Bahria University Medical & Dental College, Karachi.
3. ***Assistant Professor***
   Department of Physiology
   Fatima Jinnah Medical College, Lahore.
4. Medical Student

Address for correspondence:
DR REHANA REHMAN
Address; B-102, Block A,
KDA Officers Society,
Behind National Stadium, Karachi.
Email; drrehana7@gmail.com

ABSTRACT

Objective: To detect proportion of male and female medical students with normal Body Mass Index (BMI) and compare active life style choices selected by them.
Methods: A cross sectional study was conducted on 113 male and female medical students of 1st Professional MBBS, aged 18-21 years with normal BMI((>20<23) in Department of Physiology BUMDC. BMI was calculated as a ratio of weight to square of height in meters. Subjects were weighed on a digital weighing scale in kilograms and height was measured by stadiometer. Their life style choices were detected by a questionnaire based on demographics, food choices, dietary habits and involvement in physical activity.
Results: The proportion of total female students in medical college was higher 54% as compared to aggregate of males 46%.The study sample of 113 students with normal BMI; comprised of 56 males (64% of total males) and 57 females (50%of females) . Healthy diet was selected by 47% females and 68% males, and 68% males and 49% females were involved in physical activity in the study group. The association with physical activity of male students was statistically significant (p value <0.03).
Conclusion: Graduate entry medical students were predominantly females but normal BMI was recorded in great number of males. They although preferred fast food, but intake of plenty of fruits, vegetables, less aerated drinks, and moderate physical activity enabled them to benefit from good health as compared to females.

Key Words: BMI, DED

INTRODUCTION:

Prevalence of obesity in children and adolescent all over the world depends on interplay of genetic, socioeconomic, cultural, behavioral and environmental factors[1]. BMI an indicator of general obesity is determined as ratio of weight to square of height; computation of which is convenient, cost effective and standards are available for comparisons in population. Gain in weight is due to accumulation of fat, as a result of imbalance between energy consumed in the form of food with that utilized by means of physical activity [2].

It has been hypothesized that easy availability, effective marketing , take home facility, and reasonable prices of fast foods has enhanced inclination of high fat content food resulting in weight gain, insulin resistance and obesity in adults[3]

Physical activity is a complex behavior that is influenced by environmental and biological factors[4]. A group of studies in overweight, obese children and adolescents have focused on importance of role of aerobic exercises[5]. These studies have also indicated that BMI and body weight are not much affected by aerobic exercise but there has been an observed change in body composition for example body fat and lean mass. Many public health recommendations and clinical guidelines emphasize the importance of healthy life styles for normal body weight and eradication of obesity epidemic. Epidemiological data has indicated in some studies that aerobic fitness could be an appropriate and effective tool for lifestyle intervention.

Medical schools are the places where adults can be given an insight into importance of life style choices. Future doctors who are given knowledge of Physiology, Pathology and Clinical Medicine are more receptive to comprehend the co relation of diet, physical activity, obesity and diseases. The knowledge for selection of healthy diet can thus play an important role in the eradication of diseases like diabetes, hypertension and heart disease because of obesity[6].Keeping in view the cultural background, socioeconomic status, literacy rate and gender discrimination we have limited exercise plans in our community. In this male dominated society, boys can go to swimming pools, city lakes, playgrounds or can play even in the streets without any inhibitions but access to outdoor games and sports is restricted to some extent for females. There is a need to design exercise plans that incorporate outdoor games, aerobic exercise and walking tools for both sexes. The magnitude of effect of continuous pattern of regular physical activity should be emphasized by development of health awareness programs.

Strategies to teach students so that they accept importance of healthy life styles for prevention of associated illnesses may help in rectification of unhealthy life styles. The objective of study was to see proportion and attributes of physical wellness in both the sexes. Significance of active life styles can further be promoted by accessibility of healthy food and appropriate exercise plans independently for both the sexes. This attempt may provide thought provoking insight to change existing sedentary lifestyles by males and females for health and wellness.

MATERIAL AND METHOD:

The observational cross-sectional study was conducted on a sample of 192 male and female medical students aged 18-21 years of Bahria University Medical and Dental College. BMI was calculated as body weight in kilograms (kg) divided by the square of the body height in meters (m^2). Subjects were weighed on a digital weighing scale in kilogram with an accuracy of± 100g in their normal clothing without shoes. Standing body height (BH) was measured without shoes to the nearest 0.5 cm with the help of height scale (floor type ZT-120) with the shoulders in relaxed position and arms hanging freely. The students of both the sexes with normal BMI (>20<23) were included in study group while under weight, over weight and obese (BMI>19,> 23<25, ?25) were excluded. Response of study sample to selection of active life styles was compared in both the sexes with the help of questionnaire; comprised of demographics, food choices and physical activity involvement. Healthy diet was acknowledged by intake of plenty of water with fresh fruits and vegetables over fast food and aerated drinks. They were asked about habits, for example eating while watching television or working on the computer. Participation in physical activity was noticed by time spend in outdoor activities like games, walking, jogging, swimming, climbing upstairs and dancing exercises.

RESULTS:

In the present study, 192 students with mean age 19± 1 were surveyed, out of which 104 (54%) were females while 88 (46%) were males. 65% (113) students with normal BMI; (>20<23) stratified for our study were ; 56 males, 57 females (64% and 50% of total males and females. Healthy diet was selected by 27 females (47% of females) and 38 males (68%of males), the involvement in physical activity noticed by 38 males (68% of males), and 28 females (49% of females) was found to be significant ((p value <0.03). Intake of fast food was identified in 75% males and 72% females. Aerated drinks were enjoyed by 77% females and 66% males however habit of intake of 6-8 glasses of water daily was observed more by females with significant results (p-value < 0.05).The fruit and vegetable intake was observed by 59% and 64%males on the contrary 46% and 51% females were used to take it. Participation in all out door games for a duration of 20 minutes was a feature, recognized in males as compared to females (p-value < than 0.00). Males preferred to walk for short distances as compared to females (p -value <0.006), jogging (p -value <0.04) and deep breath as compared to females (p-value 0.01). Involvement in aerobics and participation in dance was noticed in females (p- value<0.03).

FIGURE 1:
PHYSICAL ACTIVITY PARTICIPATION OF %AGE OF MALE /FEMALE RESPONDENTS (BMI ?20<23)

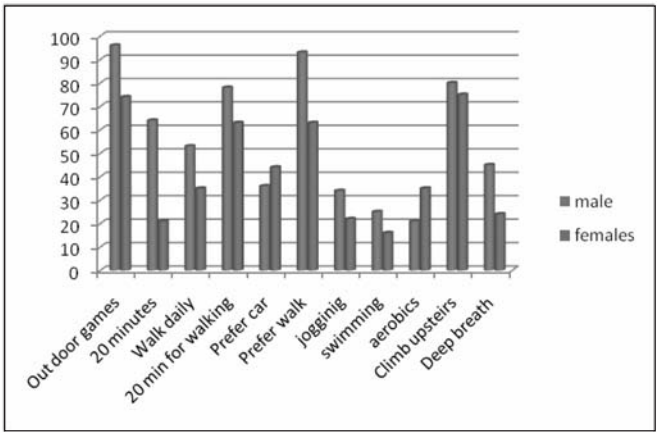
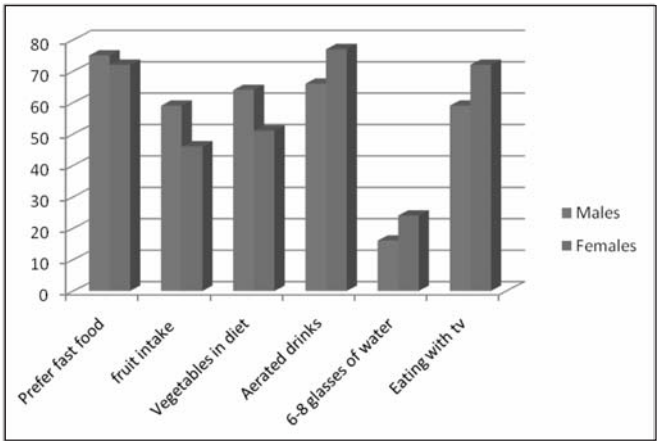


FIGURE 2:
COMPARISON OF DIETARY HABITS OF HEALTHY MALE/FEMALE STUDENTS (BMI?20<23): EXPRESSED IN %AGE



DISCUSSION:

BMI has been established as a fitness marker; cut- off points of which are predictors of mortality and morbidity in populations

TABLE1:
COMPARISON OF BOTH SEXES WITH NORMAL BMI

Questions:	Males n=56	Females n=57
Prefer fast food	42*	41*
Fruit intake	33*	26*
Vegetables intake	36*	29*
* Aerated drinks	37*	44*
6-8 glasses of water	9*	14*
Eating with Television	33*	41*
Physical activity:		
Out door games	54*	42*
20 minutes PA	36*	12*
Daily walk	30*	20*
Daily walk for 20 min	44*	36*
Prefer to go by car	20*	25*
Prefer walk	52*	36*
Jogginig	19*	13*
Swimming	14*	9*
Aerobics	12*	20*
Climb upstairs	45*	43*
Deep breath	25*	14*
*Represents numbers		

of various cultures and ethnicity[7,8,9]. Documentation of BMI suggests increased incidence and prevalence of obesity in early adult years which has continued till late adult hood[10]. It has been used by WHO (World Health Organization) to set standards of individual and population based recordings for obesity statistics, since 1980. The BMI does not come by chance; it depends upon genetic predisposition, environment, body's metabolism and life style choices especially eating habits and physical activity. The components amenable to intervention are physical activity and overall energy consumption. The absolute level (in kcal/day), at which energy equilibrium occurs is mostly determined by body weight, which affects both the basal metabolic rate and the energy charged in the form of activity[11].

During the past several decades, "Quick Service Restaurant" (fast food)trends has enhanced frequent intake of DED (Dietary Energy Density)[12] .The term fast food is any meal with short preparation time, primed with precooked ingredients, served promptly in packed form for dine in /takes away/home delivery to the customer. In 2006, the global fast food market grew by 4.8%, reached a value of 102.4 billion and accounted for 80.3 billion transactions[12]. One of the purposes of our study was to know fast food inclination in young adults with respect to health. The study pointed fast food preference of 75% males as compared to 72% females. The greater intake of fast food by males is supported by logic of greater mobility, easy access and frequent outdoor activities of males whereas females being more weight conscious, domestic by nature and fond of culinary activities prefer a home cooked meal as compared to fast food. It was observed that situational aspects of eating episodes (e.g. Location) played an important role in changing BMI leading to obesity. The results although are not statistically significant in our study but presence of fast food outlets near boys hostel might have led to convenience of import of fast food hence greater intake.

As far as dietary choices are concerned, in contrast to fast food, aerated drinks were preferred by more (77%) females and less (66 %) males. Nutritionally a cola is one of the worst foods which have so much caffeine that acts like diuretic, causes a person to lose water through urination. Just one eight-ounce glass of the stuff contains 140 calories and all of those calories come from high fructose corn syrup. The caffeine in Colas causes' high sugar that causes crash in mood or energy .This sugar is not worked off immediately it goes straight to the areas of body where is collected in the form of stubborn fat.

Water is also a major determinant of DED. It contributes more to the weight of foods than any macronutrient, thus energy dense foods are not necessarily those high in fat, but those that are dry[13]. In our study 16% males preferred greater intake of daily water, as compared to 24% females (p-value <0.01) which is required to compensate short length of urinary tract[14] .Gender discrimination for the selection of dietary choices reveals unhealthy practices of aerated drinks and eating (p value <0.04) while watching TV and working on computer by females.

Even males with normal BMI, preferred to take DED; one of the reasons being easy availability of fast food. The results are in accordance with the findings of "Medical society committee on nutrition" that emphasizes association of fast food intake with increased body mass index and weight gain[15] .The Director of the obesity program for the children's hospital Boston, declared that fast food consumption has been shown to increase calorie intake, promoted weight gain and elevated risk for diabetes[16].

Physical activity has a documented positive effect on a number of health outcomes[17]. It is described as any bodily movement produced by the skeletal muscles that result in energy expenditure. Inactivity is known to be associated with an increase risk for many chronic diseases such as coronary artery disease, stroke, hypertension, colon cancer, breast cancer, type II diabetes and osteoporosis as well as premature death. Moderate physical activity can substantially reduce the risk of diabetes[18] and cardio vascular diseases. The aim of our study was to identify males and female students of normal BMI with their participation in outdoor games; daily walk, jogging, swimming, aerobics and other physical activities as shown in table1. It was found that males enjoyed having good BMI because of greater involvement in physical activity (p value <0.03).

Aerobics recover all factors of wellness which build control on emotion, relaxes pressure, shapes body, lighten up muscles and improve functioning of cardio vascular system. Many researchers showed the influence of aerobics on impact of physiological and psychological aspects of health since 1970[19]. In a study, it was found that females who participated in aerobics 4 to 7 times a week had higher social wellness as compared to those who had frequency of 2-3 times a week .Our results in Fig. 1 documented greater involvement of females in aerobics and dance activities as compared to males (p-value significant <0.04).

Promotion of sedentary life styles, lack of emphasis on physical education, non availability of fitness centers and playgrounds, marketing and delivery of fast food at door steps and work places has enhanced global obesity epidemic. Our study has limitations

of measuring just one parameter of obesity, but message given to students for improvement in physical activity, selection of diet and intake of water can help in curtailing economic burden on prevention and treatment of fatal diseases. We aim to develop awareness of importance of exercises and objectivity to plan it. It can be achieved not only by outdoor games like cycling, hiking or swimming, even normal walking for at least twenty minutes can help the war against obesity. Wellness is a journey, not a destination, how will youngsters travel it; by eating less dense food, by burning more calories or by keeping a balance between them? To avoid health compensations, effective interventions to improve life styles must tackle both diet and physical activity in an integrated way independently in both sexes.

CONCLUSION:

It was concluded that proportion of physical wellness,

- as detected by BMI was greater in males.
- use of fruits and vegetables can help in compensation of excessive fast food, provided aerated drinks are avoided.
- Adequate physical activity helps in healthier existence by utilization of high food fat content.

ACKNOWLEDGMENTS:

The authors are thankful to Head, Department of Physiology, Prof. Dr. Sadiqa Syed at Bahria University Medical and Dental College for giving permission to conduct this study and the students without whose response and participation this article could not have been possible.

REFERENCES:

1. Troiano R P. Physical inactivity among young people. N Engl J Med 2002;347:10:706
2. Peterson L et al. Longitudinal study of the long term relation between physical activity and obesity in adults. International journal of Obesity and Related metabolic disorders 2004; 28:105-112
3. Prentice AM, Jebb SA. Fast Foods, Energy Density and Obesity: A Possible Mechanistic Link. Obes. Rev. 2003; 4(4): 187-94.
4. Thorburn AW, Proietto. Journal of Biological Determinants of Spontaneous Physical activity Rev 2001 ;87-94
5. Watts K, Jones TW, Davis EA, Green D. Exercise studies in Obese Children and Aldolescents: Current Concepts Sports Med 2005; 35: 375-92
6. Yang EJ, Kaerver J, Song W. Dietary Patterns of Korean Americans described by Factor Analysis. J Am Coll Nutri 2005;24: 115 – 21
7. Flegal K M, Graubard B I, Williamsen D F, Mitchell G H. Excess deaths associated with underweight, overweight, and obesity. JAMA 2005; 293: 1861–67.
8. Stevens J. Impact of age on associations between weight and mortality. Nutr Rev 2000; 58: 129–37.
9. Mhurchu NC, Rodgers A, Pan W H, Gu D F, Woodward M. Body mass index and cardiovascular disease in the Asia-Pacific region: an overview of 33 cohorts involving 310,000 participants. Int J Epidemiol 2004; 33
10. Ma Y, Bertone E, Stanek E, et al. Association between eating patterns and obesity in a free- living adult population. Am J Epidemiol 2003; 158:85-92.
11. Aslam M, Saeed A, Pasha G, Rand AS. Gender differences of body mass index in adults of Pakistan: a case study of Multan city "Pakistan Journal of Nutrition 2010; (9), 2: 162-166.
12. "Research and Markets". http://www.researchand markets.com/.
13. Drewnowski A, Almiron-R E, Marmonier C, Lluch A. Dietary energy densiy and body weight: is there a relationship? Nutr Rev 2004; 62:403-13
14. Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public Health. 1985; 100(2): 126-131.
15. Fast Food, Race/Ethnicity, and income: A Geographic Analysis". http://minority-health.pitt.edu/archive/00000469/01/FastFood,Race-Ethnicity,and income.pdf.
16. Warner , Melanie "Salads or No, Cheap Burgers Revive McDonald's." The New York times 19 April 2006.Academic Search Premier. EBSCOhost. University of Nevada, Reno Libraries. 5 February 2008.
17. Caspersen CJ, Powell EC, Christenson GM. Physical activity, exercise,and physical fitness: definitions and distinctions for health-related research. Public Health 1985; 100:126-31.
18. Francesco B, et al. The determinants of obesity. WHO Regional office for Europe 2007.
19. Nancy W P. The influence of musical preference on the affective state, heart rate and perceived exertion rating of participants in aerobic dance/ exercise classes. Unpublished doctoral dissertation1991; Texas Women's University.