Dietary Habits and Health Survey in Undergraduate Medical Students: Body Mass Index & Questionnaire-based Study

Kharbanda Charu

Assistant Professor of Physiology, BJ Medical College, Ahmedabad, India.

ABSTRACT

Introduction: In society, a medical practitioner is regarded as the synopsis of correct food habits & lifestyle. Medical students, at the same time, also are perceived to have a greater idea of correct dietary habits & a healthy lifestyle. It is but natural that students who themselves adopt a healthy lifestyle are more likely to influence their patients. Nevertheless, studies are there indicating that medical students who stay in hostels are more prone to erratic dietary habits, junk food addiction and lack of exercise due to long study hours.

Aims: Research regarding nutritional status in M.B.B.S., physiotherapy and nursing students in BJMC, Ahmedabad.

Material & methods: a cross-sectional survey is done with 910 hostels residing & day scholar M.B.B.S., physiotherapy and nursing students in BJ medical college, Ahmedabad. Parameters such as BMI and waist-hip ratio were measured in all participants and students are categorised into underweight, normal weight, overweight and obese.

Results: Regarding the BMI calculation for study participants, 9.6 % of students are underweight, 70.2 % are Normal weight, 16 % are overweight and 4.2 % are obese. According to these data, more than 20 % of students are overweight at this tender age which makes them susceptible to lifestyle diseases in the future. Regarding waist-hip ratio (WHR) 26.9 % of students have WHR of more than 0.9.

Conclusion: Healthy dietary practices among medical students are very important as they are future caregivers. If they ignore their health then they are more likely to fail to guide their patients regarding a healthy lifestyle. Only superior knowledge about a healthy lifestyle does not necessarily result in better practices. Students should be taught about the importance of yoga practices, daily exercises and dietetics.

Key Words: Body mass index, Waist-hip ratio, Obesity, Lifestyle diseases, Patients, Food

INTRODUCTION

There is a close relationship between food and health. Hippocrates stated more than 2500 years ago, "let food be the medicine and medicine be the food." As millennials are facing increase burden caused due to lifestyle diseases, there has been a renewed interest in the relationship between food & health.

In society, a medical practitioner is regarded as the synopsis of correct food habits & lifestyle. Medical students, at the same time, also are perceived to have a greater idea of correct dietary habits & healthy lifestyles. It is but natural that students who themselves adopt a healthy lifestyle are more likely to influence their patients. Nevertheless, studies are there indicating that medical students who stay in the hostel

are more prone to erratic dietary habits, junk food addiction and lack of exercise due to long study hours.^{1,2,3}

Lifestyle diseases pose a great burden on modern India due to overwhelming western influences. Lifestyle diseases are obesity, atherosclerosis, osteoarthritis, diabetes mellitus, heart disease etc. These diseases have a close association with habits that root early in student life. Medical and para-medical students are also known to have unhealthy lifestyle habits including inappropriate nutrition, lack of exercise, smoking, substance abuse, caffeine overuse and improper sleeping habits.^{4,5,6}

Although student life is a temporary phase of life but habits inculcated at this time generally persist in adult life. Student life is also a time when behaviours are conducive to change.

Corresponding Author:

Dr. Kharbanda Charu, B-6,304, LA Habitat, Thaltej, Ahmedabad 380059, India.

Phone: 9426260369; Email: charupiplani1@gmail.com

ISSN: 2231-2196 (Print)

ISSN: 0975-5241 (Online)

Received: 19.08.2021

Revised: 12.09.2021

Accepted: 08.10.2021

Published: 13.12.2021

University and college arenas are great places for nutritional and health education. . Sakamaki et al. conducted a study on Chinese university students showing that only a small number of students (7%) apply the concept of healthy dietary intake when selecting food. However, a majority (51%) showed a desire to learn about a healthy diet.⁷ A similar study on Swedish university students showed that females had healthier habits despite being more prone to stress. Male students on the other hand had a high level of obesity and were less interested in nutritional advice, health-enhancing activities, were also physically inactive and indulged in alcohol consumption.⁸

AIMS & OBJECTIVES

Research regarding nutritional status in M.B.B.S., physiotherapy and nursing students in BJMC, Ahmedabad has been found lacking. Therefore, I have done this study to ascertain dietary habits in M.B.B.S., physiotherapy & nursing students in BJ medical college, Ahmedabad.

MATERIALS & METHODS

Study design

After obtaining the permission from central research committee of BJ medical college, Ahmedabad I conducted a cross-sectional survey for hostel residing & day scholar M.B.B.S., physiotherapy and nursing students in BJ medical college, Ahmedabad. All the participants were properly informed about the purpose of the study and the method of completing the questionnaire.

Setting

Clinical Laboratory, Dept. of Physiology, BJ medical college, Ahmedabad.

Study participants

Participants were M.B.B.S., Physiotherapy and nursing students of various years in BJ medical college, Ahmedabad. Students with chronic illnesses or on prescribed medication were excluded from the study.

Data collection procedure:

A self-reporting structured questionnaire was designed & questions regarding the number of meals, food choices in each meal, any type of food addiction, and lifestyle practices were incorporated.

Basal metabolic rate (BMI) & Waist – hip ratio (WHR) Calculation

BMI is calculated according to the table given below:

Weight	BMI	% of students
underweight	< 18.5	
Normal weight	18.5 – 24.9	
overweight	25 – 29.9	
Obese	> 30	

Waist – hip ratio (WHR) is calculated as given below:

Measure at the smallest point of the waist. Wrap a tape measure around your waist at the smallest point, usually just above the belly button. This is waist circumference.

Measure around hips. Next, we wrap the tape measure around the hips at the widest part. This is the hip circumference.

Divide. Now, use a calculator to divide waist size by your hip size. This is the waist-to-hip ratio.

RESULTS AND OBSERVATIONS

Total students = 910

Total boys = 410 [44.4 %]

Total girls = 500 [55.6 %]

Hostelers = 650 [71.4%]

Day scholars = 260 [28.6%]

1. In our study, it is disappointing to note that 64.8 % of students skipped their daily breakfast and only 35.2 % of students say that they have breakfast daily.⁹ 37.9 % choose lack of time as the reason for skipping breakfast & 17.2 % say that they have college anxiety in the morning hours that leads to decreased appetite in the morning hours.
2. 76.7 % of students say they have fruit daily and it is good to know that 10 % of students have more than three servings of fruits and salads. 37.4 % of students said they have one category of vegetables daily, 37.4 % have 2 Katori and 15.4 % have no vegetables in their daily diet at all.
3. Regarding the choice of healthy foods for snacking, 31.2 % of students say that they have fruits and salads for snacking while 68.8 % choose pizza, burgers, French fries and bakery items for snacking. This study showed better results compared with the study conducted by the Faculty of Medicine, Mansoura University, Egypt which showed that two-thirds of the 908 medical students included in the study consumed fast food in the form of junk food regularly.¹² The high prevalence of fast/junk food consumption causes concerns about the health of future health caregivers. It is heartening to know that a good percentage of students in this study consume fruits 1 or 2 servings and vegetables one or two katoris daily. Though 22.6% of students are also addicted to pizza and burgers students' consumption of fruits and salads

has increased as compared to previous national and international studies.

4. 44 % of students say they have pizza, burgers or other types of junk food once a week while 15.4 % of students have them more often than three days a week.
5. 44.7 % of students exercise for half an hour daily while 55.3 % do not exercise on daily basis.
6. 94.6 % of students say they do not smoke on regular basis.
7. 93.6 % of students say they do not consume alcohol on regular basis.
8. 99.4 % of students say that they find mess food less nutritious than home-cooked food. This increases concerns about food facilities provided to our future caregivers.
9. 46.7 % of students confirm that they face bulimia nervosa during stress situations such as examination times and 56.7 % agree that they have junk/fast food during these bouts of anxiety-related eating. 48.4 % state that they have anorexia nervosa during stressful situations and 46.6 % say that they do not force to eat at those times. Bulimia nervosa and anorexia nervosa both add to either form of malnutrition i.e., obesity or asthenia.
10. Regarding the BMI calculation for study participants, 9.6 % of students are underweight, 70.2 % are Normal weight, 16 % are overweight and 4.2 % are obese. According to these data, more than 20 % of students are overweight at this tender age which makes them susceptible to lifestyle diseases in the future.

Weight	BMI	% of students
underweight	< 18.5	9.6
Normal weight	18.5 – 24.9	70.2
Overweight	25 – 29.9	16
Obese	30	4.2

11. Regarding waist-hip ratio (WHR) 26.9 % of students have WHR of more than 0.9. In men, a waist-hip ratio of 0.9 or more than 0.9 & for women ratio of 0.85 or more is considered obese according to WHO. WHR more than 1.0 for either sex accounts for much higher chances of health problems. Too much fat around the waist region is called abdominal obesity. This kind of obesity is also called visceral obesity because it is due to more fat around the viscera or organs of the abdominal cavity. Visceral fat releases chemicals that can cause inflammation in the body and this visceral fat can lead to higher cholesterol, higher glucose and an increase in blood pressure. It also leads to high triglycerides in the blood.

DISCUSSION

Regarding daily breakfast, my findings are more or less the same as the descriptive cross-sectional study conducted by

Ackuaku-Dogbe and Abaidoo in 317 medical students at the University of Ghana Medical School, Korle Bu-Accra and they found that the overall breakfast skipping among the students was 71.92%.

Breakfast is said to be the most important meal of the day as it provides energy to the brain and fasting body, improving learning and attention.

Regarding daily consumption of vegetables & fruits, my findings are comparable to those of the study conducted in 2014 in Saudi Arabia, where 78% of students had low consumption of fruits and vegetables and only 22% consumed the recommended daily intake.¹⁰ In a similar study in 494 undergraduate students at the University of Malta in 2011, half of the students had fewer fruit and vegetable servings per day, one-third 2–4 servings, while only 15% had 5 or more servings. All these figures are lacking and fall short of the five daily servings of fruit and vegetables as recommended by the World Health Organization.¹¹

The quality of food is as important as the quantity of food. It is a well-known fact proven also by the various researches & publications that substantial consumption of fruits & vegetables decreases the risk of major chronic diseases. Good consumption of fruits & vegetables in future medical practitioners, as in our study, could achieve potential health benefits with regards to chronic lifestyle diseases.

Findings regarding the consumption of fast food can be compared to the study conducted by the Faculty of Medicine, Mansoura University, Egypt which showed that two-thirds of the 908 medical students included in the study consumed fast food regularly.¹² These facts are alarming as the high prevalence of fast/junk food preference and consumption by future healthcare practitioners poses a serious health concern.

Finding of Practice of exercise among medical & paramedical students in this paper are almost similar to findings of the study conducted in Kasturba Medical College (KMC), Manipal in 2012 where Over half of the students were utilizing the sports facilities made available by the university. Most of the students 165 (69%) had normal BMI, (51) 21% were overweight, and 7 (3%) were obese. Of the 62% who were regularly exercising, physical activity was more among boys as compared to girls (62% v/s 38%). Lack of time 46 (60.5%), laziness (61.8%), and exhaustion from academic activities (42%) were identified as important factors among medical students who did not exercise.^{13,14}

It is good to know only about 5 % of students smoke or consume alcohol while approximately 95 % of students are non-smokers and non-alcoholics which is in total contrast to studies done elsewhere globally. A similar study on Swedish university students showed that females had healthier habits despite being more prone to stress. Male students on the other hand had a high level of obesity and were less interested

in nutritional advice, health-enhancing activities, were also physically inactive and indulged in alcohol consumption.¹⁵

It is usually common to find that hostel residents complain about the poor quality of food served in the hostel mess. Here also, 99.4 % of students say that they find mess food less nutritious than home-cooked food. It is quite obvious that food prepared in bulk in hostel mess lacks in food quality & hygiene. Many of the mess contractors are not even FSSAI (food safety & standard authority of India) license holders. Such food contractors may have very little knowledge about food safety & food hygiene. A possible solution to that is all mess contractors should have an FSSAI license or registration and there should be proper hygiene of the mess kitchen regarding pest control, water purification, proper washing & cleaning of vegetables and groceries etc.

Medical college can be a stressful period that could lead to eating disorders (ED) among students in the form of either anorexia nervosa or bulimia nervosa.^{16,17} In my study students face either form of ED during stressful conditions. In my opinion, students should be taught to adopt active coping mechanisms in place of avoidance mechanisms. Active coping mechanisms are planning and acceptance and avoidance mechanisms are denials, substance abuse or eating disorders. Students can be provided with game zones or recreational activities to destress.

In the present study, more than 20 % of students were overweight & out of this percentage, 4.2 % were obese. Overweight and obese make them susceptible to many lifestyle diseases in later life. Obesity is a prime risk factor for cardiovascular diseases (CVD) and hypertension.¹⁸ According to the Indian Association of Paediatrics (IAP) 2015, the prevalence of overweight and obesity were 19.1% and 14% in adolescents (8 -18) age group.¹⁹ These findings are quite similar to findings in my study where age ranges from 18 to 20 years. Sasi RSK reported that BMI and WHR were important risk predictors of hypertension.²⁰ Many factors contribute to obesity as western lifestyle influences, erratic eating habits, stress, psychological factors such as depression, low self-esteem, anxiety etc.^{21,22}

CONCLUSION

Healthy dietary practices among medical students are very important as they are future caregivers. If they ignore their health then they are more likely to fail to guide their patients regarding a healthy lifestyle. Only superior knowledge about a healthy lifestyle does not necessarily result in better practices. Students should be taught about the importance of yoga practices, daily exercises and dietetics.

Financial support: Not required

Conflict of interest: None

ACKNOWLEDGEMENT

I acknowledge the immense help received from the scholars whose articles are cited and included in the references of this manuscript. I am also grateful to authors, editors and publishers of all those articles, journals and books from where the literature for this article has been reviewed and discussed.

REFERENCES

1. Sajwani RA, Shoukat S, Raza R.. Knowledge and practice of healthy lifestyle and dietary habits in medical and non-medical students of Karachi, Pakistan. *J Pak Med Assoc.* 2009; 59:650–5.
2. Gupta S, Ray TG, Saha I. Overweight, obesity and influence of stress on body weight among undergraduate medical students. *Indian J Community Med.* 2009; 34:255–7.
3. Vibhute NA, Baad R, Belgaumi U.. Dietary habits amongst medical students: an institution-based study. *J Family Med Prim Care.* 2018 Nov-Dec;7(6):1464-1466.
4. Eyre H, Kahn R, Robertson RM. Preventing cancer, cardiovascular disease, and diabetes: a common agenda for the American Cancer Society, the American Diabetes Association, and the American Heart Association. *Diabetes care* 2004; 27: 1812-24.
5. Ignarro LJ, Balestrieri ML, Napoli C. Nutrition, physical activity, and cardiovascular disease: an update. *Cardiovasc Res* 2007; 73: 326-40
6. Webb E, Ashton CH, Kelly P, An update on British medical students' lifestyles. *Med Educ* 1998; 32: 325-31.
7. Sakamaki R, Toyama K, Amamoto R.. Nutritional knowledge, food habits and health attitude of Chinese university students--a cross-sectional study. *Nutr J* 2005; 4: 4.
8. Von Bothmer MI, Fridlund B. Gender differences in health habits and motivation for a healthy lifestyle among Swedish university students. *Nurs Health Sci* 2005; 7: 107-18.
9. Ackuaku-Dogbe EM, Abaidoo B. Breakfast eating habits among medical students. *Ghana Med J.* 2014; 48:66–70.
10. Al-Otaibi HH. The pattern of fruit and vegetable consumption among Saudi university students. *Glob J Health Sci.* 2013; 6:155–62.
11. Cefai C, Camilleri L. The dietary habits of Maltese university students. *Malta Med J.* 2011; 23:7–12.
12. El-Gilani AH, Abdel-Hady DM, El Damanawy R. Consumption and knowledge of fast/junk foods among medical students, Mansoura University, Egypt. *TAF Prev Med Bull.* 2016; 15:440–5.
13. Chythra R Rao, BB Darshan, Narita Das, The practice of Physical Activity among Future Doctors: A Cross-Sectional Analysis. *Int J Prev Med.* 2012 May; 3(5): 365–369
14. El-Gilani A, El-Masry R. Physical Inactivity among Egyptian and Saudi Medical Students. *TAF Prev Med Bull.* 2011;10:35–44.
15. Von Bothmer MI, Fridlund B. Gender differences in health habits and motivation for a healthy lifestyle among Swedish university students. *Nurs Health Sci* 2005; 7: 107-18.
16. Noura A, Farhana I, Eiad A., Stress coping strategies among medical students and trainees in Saudi Arabia: a qualitative study. *BMC Medical Education* 2020; 7:124.
17. Koolhaas JM, Bartolomucci A, Buwalda B.. Stress revisited: a critical evaluation of the stress concept. *Neurosci Biobehav Rev.* 2011;35(5):1291–301.
18. Haque M, Jahan. A study of the relationship of waist circumference and waist-to-hip ratio with blood pressure levels in young obese adults. *Int J Innov Res Dev.* 2015;4(5):31-4.

19. Eshwar TKM, Chudasama RK, Eshwar ST. Prevalence of obesity and overweight and their comparison by three growth standards among affluent school students aged 8–18 years in Rajkot. Indian J Public Health. 2017;61(1):51-4.
20. Sasi RSK, Devi US. Assessment of body mass index, waist-hip ratio, blood pressure, pulse pressure among the obese male population. Sch. J. App. Med. Sci., 2017; 5(5B):1832-36.