ORIGINAL RESEARCH PAPER

Nutrition

KEY WORDS: Calories, Proteins, Fats, Food Selection

EATING PATTERN OF MEDICAL AND NURSING STUDENTS IN A MEDICAL COLLEGE IN NORTH INDIA

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ABSTRACT

The past several decades have seen a remarkable shift in the nutritional trends in India. In addition, college students living in hostels and paying-guests are sometimes forced to eat junk and low quality food. Overwhelming schedule can be a major reason for students' bad eating habits. Therefore, the aim of this study was to describe the food consumption patterns in a sample of Indian college students.

Aim- To describe the food consumption patterns in a sample of Indian college students.

Methodology- It was a survey based study of nursing and medical students in which 72 were females.

Results- Calorie intake of students was slightly less as compared to standards with girls doing better than boys.

Conclusion - Need to emphasize good eating habits from early stage of life.

Introduction-

The past several decades have seen a remarkable shift in the nutritional trends in India. In addition, college students living in hostels and paying-guests are sometimes forced to eat junk and low quality food. Overwhelming schedule can be a major reason for students' bad eating habits. College offers many temptations. Students are usually on their own, free to eat what they want and when they want. At this age they should eat healthy food; but instead many of these students have faulty food habits. College students should focus on consuming a balanced diet. Therefore, the aim of this study was to describe the food consumption patterns in a sample of Indian college students.

Methods and Materials –

A self-administered, semi-quantitative 4-meal pattern-based food frequency questionnaire (FFQ) was designed to assess the dietary intake of medical and nursing students for a week. A total of 116 students (aged 17 to 25 years) attending a private medical and nursing college in Ludhiana, India participated in the survey.

Statistical Analysis –

In the descriptive analysis, continuous variables were expressed as Mean±S.D and categorical variables were expressed as count (percentage). To obtain the comparison between two groups, for continuous variables Independent t-test was used for normally distributed data or Mann- Whitney U test was used for non-normally distributed data. And one-sample t-test was used the find the significant difference between the calories, fats and proteins intake by the participants from standard amount. The significance level was set at $p<0.05$. All statistical analysis was performed using SPSS, version 21.0. Armonk, NY: IBM corp.

Results

Demography

Out of 116 participants, 72 (62.1%) were females. Mean age of study group 20 + 2.01 years. The mean weight (kg) 58 + 13.10, mean BMI 21.26 + 3.70.

Among the 3 meal pattern, lunch was preferred by both genders 61(52.6%) followed by dinner 40 (34.5%) and breakfast 15 (12.9%). Majority (79.2%) unintentionally skipped meals while 24 (20.7%) skipped meals intentionally. This was because of busy schedule at work places and the food was not of their taste. In our study the maximum calorie and fat intake was from snacks and fast food. This is including breakfast, lunch, dinner and snacks (questionnaire attached) Table 1.

Table 1 showing calories, fat and protein consumed in each meal

	Diet			
	Breakfast	Lunch	Dinner	Snacks
	Mean±S.D	Mean±S.D	Mean±S.D	Mean±S.D
Calories	531±254.12	774±247.20	680±232.16	816±592.68
Fat	18.6±9.70	15.3±3.59	13.8±3.33	36.8±26.33
Protein	14.3±6.57	21.6±7.42	19.5±7.42	19.0±14.14

Students in older age group (23-25), more frequently skipped their meals and were more likely to eat snacks/fast food. This constituted the main source of calories 819 + 719.97, fat 36.3 + 25.54 and protein 25.7 + 21.34.

Females consumed more calories (860 + 640.89) and fats (38.8 + 29.76) through snacks than males. Males preferred lunch over snacks. (Table 2)

Table 2 : Comparison of Calorie, Fat and Protein intake in Males and Females

	Male	Female	
	Mean±S.D	Mean±S.D	p-value
Calories			
Breakfast	467±235.79	569±258.69	**0.035**
Lunch	812±279.04	750±224.32	0.188
Dinner	714±252.11	640±217.86	0.218
Snacks	745±502.73	860±640.89	0.309
Fat			
Breakfast	16.8±10.11	19.8±9.34	0.109
Lunch	14.9±3.93	15.6±3.38	0.365
Dinner	14.0±3.40	13.7±3.30	0.613
Snacks	33.7±19.4	38.8±29.76	0.263
Protein			
Breakfast	14.1±7.57	14.4±5.93	0.802
Lunch	21.8±8.74	21.5±6.54	0.789
Dinner	21.0±7.12	18.6±7.50	0.088
Snacks	17.4±11.66	20.0±15.46	0.303

Both the genders skipped breakfast unintentionally with lunch as their preferred meal.

Calorie intake was more among females as compared to recommended calories(2230 Kcal). Men consumed fewer calories than recommended (standard 2730). (Table 3)

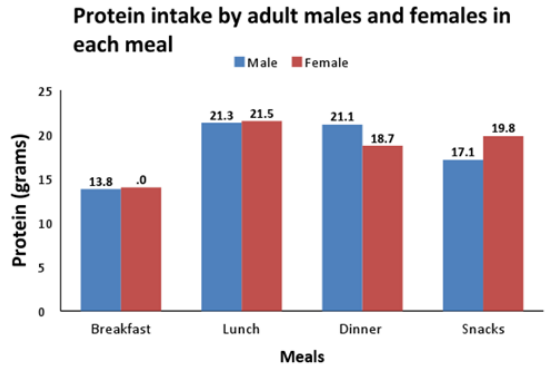
Fat intake was below recommendation in both genders. Males 19.46 gm/day (standard 25 gms) and for females 21.45 gms/day (standard 25 gms). (Table 4)

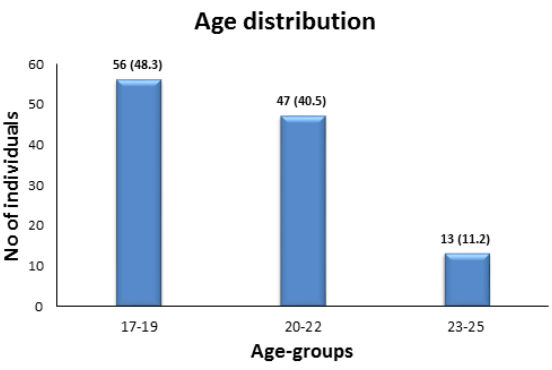
Table: 3 Comparison of Fat intake with the Standard in Males and Females

	Children		Adults	
	Male	Female	**Male**	Female
Calories				
Intake (Kcal) Per day	3278	2913	2712	2815*
Standard (Kcal)	3020	2440	2730	2230
Fats				
Intake (grams) Per day	28.02	30.46	19.46*	21.45*
Standard (grams) Per day	25.0	25.0	25.0	25.0
Protein				
Intake (grams) Per day	24.07	20.47*	18.32*	18.51*
Standard (grams) Per day	61.5	55.5	60.0	55.0

*p value <0.05 as compared to standard intake

Protein intake (grams/day) was significantly below the required standards in both the genders. Males 18.32 gm/day (60 gms/day) and females 18.51 gms/day (55 gms/day. (Table 5C,D)





Discussion-

The purpose of our study was to identify eating pattern in Nursing and Medical students. This will help in timely intervention and making effective programs/guidelines to improve eating habits since dietary preferences tend to track over the lifespan, Kelder et al[1]. This will help in students to have balanced diet and avoid future lifestyle related diseases.

Our study included 116 nursing and medical students participated. It was found that pattern of food intake deviated substantially from the standard recommendations. Similar findings were seen in study conducted by Jane Wardle et al[2] which reported food intakes below standard recommendations where 2/3rd of the participants failed to consume food from the five recommended food groups daily and 22% reported eating fast food every day. In our study 92 participants skipped meals unintentionally constituting 79.2% and 24 participants (20.7%) skipped meals intentionally because of hectic work schedules and lack of taste for food.

It was further observed in our study that out of the 3 major meal pattern, preferred meal by both the gender was lunch constituting 52.6% and least preferred was breakfast which contributed 12.9%. Similar results were found by Almoosawi et al[3]. Their study also found that lunch and evening meals contributed greatest proportion of total daily energy, protein and fat intake. Among the 4-meal pattern which included breakfast, lunch, dinner and snacks, the maximum calorie intake and fats were from snacks. This result is similar to the studies done previously, Nitin Joseph et al[4], increased intake of fast food among high school boys associated with overweight and obesity in them. Similar study by S. Puri et al[5] reported 58.8% of adolescents preferred fast food items over regular meals. Similar observations were made by N. Vaida et al[6] where young consumers prefer tasty and attractive food rather than paying attention to the dietary value. The preference for fast food over regular meals was attributed not only to the taste and easy availability but also hectic schedule and short breaks for food. Health is at stake with people becoming more and more obsessed with their work and status. Long duty hours is also a contributing factor.

In our study we found that older the age group, more often skipped meals and consumed more snacks. This was the biggest source of their calories, fat and protein in their diet. This finding was in contrast to previous studies done by[7] and [8] where snacks provided lower proportion of total energy from fat or protein than did major meals. In study done by Rebecca et al[9] percentage of protein intake was highest in evening meals particularly among older adults, but in our study afternoon meals contributed maximum protein intake.

Our study is consistent with study done by Rathi et al[10] where students in study reported low intake of proteins and cereals. Low intake of protein rich foods may increase the disease burden. In our study, females were consuming more than recommended calories[11]. It was 2815 kcals (standard requirement 2230) and males consumed fewer calories than required. This finding was similar as seen by Rathi et al[10] who demonstrated food habits that were more closely aligned with national guidelines. These gender differences could be attributed to greater concern of females regarding weight. To our surprise, in our study, in contradiction to previous studies as done by Coutenay et al[12,] females were consuming more caloreis and fats through snacks than male gender who were found more inclined in preferring lunch (proper major meal). This can have important health benefits. If females can chose healthier snacks, the calories consumed can be reduced dramatically.

In our study both the genders skipped breakfast unintentionally with lunch as their preferred meal. Lunch meal topped in calorie intake by both genders (751 kcal) with protein intake (21.3 gms) in males and 21.5 gms in females, followed by consumption of fats 32.8 gms in males and 37.4 gms in females which was from snacks, William et al[13].

In our study more fat intake in females were coming from snacks/fast food in contrast to study done by M S Ya et al[14] where men consumed more high calories and high fat food.

Conclusion

A significant population of nursing and medical students have food intakes that fall short of the recommendations. Unhealthy eating habits like skipping meals, more dependency on snacks and fast foods needs and awareness. They should be encouraged to take balanced diet which is nutrient dense and low in fat. Timely initiatives can prevent many lifestyle disorders among the youth. The hospital dietary an offer healthier snacks to the students. Also the teaching institutes should incorporate in their academic curriculum the benefits of healthy diet and effective implementation of cafeteria policies.

REFERENCES

1. Kelder SH. Perry CL. Klepp KI et al,: Longitudinal tracking of adolescent smoking,

physical activity, and food choice behaviours. American Journal of Public Health. 1994,84:1121-1126.
2. Wardle J, Haase AM, Steptoe A, Nillpun M, Jonwutiwes K, Bellisie F. Gender differences in food choice: the contribution of health beliefs and dieting. Ann Behav Med. 2004;27:107-16.
3. Almoosawi S, Winter J, Prynne CJ, et al. (2012) Daily profiles of energy and nutrient intakes: are eating profiles changing over time? Eur J Clin Nutr 66, 678-686.
4. Joseph N, Nelliyanil M, Rai S, YP RB, Kotian SM, Ghosh T, Singh M. Fast food consumption pattern and its association with overweight among high school boys in Mangalore city of southern India. J Clin Diagn Res. 2015; doi: https://doi.org/10.7860/JCDR/2015/13103.5969.
5. S. Puri, V Bhatia, H Swami, S Rai, C Mangat, Impact of a diet and nutrition related education package on the awareness and practices of school children of Chandigarh. The Internet Journal of Epidemiology 2007 6 (1) Available from URL: http://ispub.com/IJE/6/1/9452 [Accessed June 5, 2012]
6. N. Vaida, Prevalence of Fast Food Intake among Urban Adolescent Students. The Intrenational Journal of Engineering and Science 2013 2:353-59.
7. Bellisle F, Dalix AM, Mennen L, et al. (2003) Contribution of snacks and meals in the diet of French adults: a diet-diary study. Physiol Behav 79, 183-189.
8. Roos E & Prättälä R (1997) Meal pattern and nutrient intake among adult Finns, Appetite 29, 11-24.
9. Berner LA, Becker G, Wise M, et al. (2013) Characterization of dietary protein among older adults in the United States: amount, animal sources, meal patterns. J Acad Nutr Diet 113, 809-815.
10. Rathi N, Riddle L, Worsley A (2017) Food consumption pattern of adolescents aged 14-16 years in Kolkata, India. Nutrition Journal 2017;16:50. https// doi.org/ 10.1186/s12937-017-0272-3.
11. World Health Organization: Young People's Health in Context: Health Behaviour in School-aged Children (HSBC) study: International report from the 2001/2002 survey. Copenhagen: World Health Organization, Regional Office for Europe; 2004.
12. Williams P (2005) Breakfast and diets of Australian adults: an analysis of data from the 1995 National Nutrition Survey. Int J Food Sci Nutr 56, 65-79.
13. MS. Ya-LiHuang, et al. (1994) What do college students eat? Food selection and meal pattern. Nutrition Research 14(8):1143-1153.
14. Courtenay WH, McCreary DR, Merighi JR. Gender and ethnic differences in health beliefs and behaviours. Journal of Health Psychology. 2002. 7:219-231.
15. Recommended Dietary Allowances for Indians, 2010, National Institute of Nutrition, Hyderabad, India.