Assessment of Nutritional Status of Medical Students

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Research Article

Abstract: The transition from high school to college can be a stressful lifestyle change for young adults. During this transition period students can develop a variety of health attitudes and behaviors that may have a negative impact on their overall wellbeing. The objective of this study was to assess nutritional status of medical students by determining their caloric intake and Body Mass Index (BMI). This study was carried out in year 2011 at Rajiv Gandhi Institute of Medical Sciences, Adilabad. A total of 120 medical students (48 male, 72 female) aged 20±2 year were the participants. Students completed a questionnaire on dietary intake and anthropometric measurements were performed. The findings were analyzed and statistical relationships were determined by using chi-square test. The recommended caloric intake was recorded only in 14(29.17%) males & 15 (20.83%) females while it was found that 60% of students were having normal BMI.

Keywords: Caloric intake, Body Mass Index, Medical Students.

Introduction

Proper nutrition is important in improving the community health in general and of the risk groups in particular. Balance nutrition can protect against many diseases/disorders resulting from nutrient deficiencies or excess. Under nutrition in terms of protein and energy results in poor growth, poor resistant to bacterial or viral infection and to the very known disorders of kwashiorkor and marasmus.[1] Malnutrition aggravates a wide spectrum of disease condition, diminishing the quality of life, personal productivity and longevity as well. The years between the ages of 18 and 24 are often difficult. This is a transition stage when one ceases to be a child and begins to be an adult. Nutritionally, these are important years because during this time young adults develop eating habits that are likely to be maintained for life. In addition to continued physical maturation, young adults also endure the stress of social maturation and independence [2]. College students, like other segments of the adult population, may not consume an adequate diet, or exercise regularly [3]. Their diet is usually high in fat, sodium, and sugar because of frequent snacking and consumption of fast food[4]. Students generally skip breakfast or have something they can prepare in their dorm room, eat quickly, or carry to class. Most students tend to snack throughout the day. Snack foods chosen tend to be chips, crackers, or sweets that most keep in their dorm room or apartments that they have purchased from dining halls and convenience [5]. These behaviors could be linked to the perception that students are exposed to the college environment where unhealthy foods are more readily available than healthy foods. Medical Student have knowledge and they know the importance of balanced diet as Syllabus on nutrition is taught from First MBBS so they have got better knowledge about nutrient compared to general population .Medical education is also stressful throughout the whole course of training. The objective of this study was to assess nutritional status of medical students by determining their caloric intake and Body Mass Index (BMI) and to compare nutritional status of male and female medical students.

Materials and Methods

The Present study was carried out amongst the 120 MBBS student's of different batches studying in Rajiv Gandhi Institute of Medical Sciences, Adilabad during January-June 2011. Information was collected directly from students in pretested and predesigned questionnaire. Students were trained to calculate their caloric intake by having session for them on 'Count What You Eat'. Data on average daily food consumption was recorded in diet sheet; conversion factors of Indian food provided by Gopalan[6] *et al.*. and Swaran Pasricha[7] were used to calculate caloric consumption. Observed intake of calories was compared with recommended daily allowance according to age and sex. As participants comes under moderate type of category, the caloric requirement for male is in the range of 2700-2800.and for female 2200-2300 as per guidelines given by ICMR[8]. So participants were classified based on caloric intake as 1) Less than recommended (for male < 2700 and for female < 2200) Recommended (for male 2700 -2800 and for girls 2200 -2300) and 3) More than recommended (for male > 2800 and for female > 2300). Anthropometric

measurements were made in the class room. Weight and height were taken as per standards of World Health Organization [9]. Weight was determined by using weighing scale, height was measured by using a stadiometer and Body Mass Index (BMI)) was calculated using the formula weight (kg)/height ^{2} (m ^{2}). Students were classified according to their BMI as less than Normal (underweight - < 18.5), Normal (Normal 18.5-25) and above normal (pre-obese > 25). Body weight was measured to the nearest 0.l kg without shoes and jacket using a portable scale. The balance used in this study was calibrated regularly. Body height was measured to the nearest 1.0 cm. All the measurements were made by one observer. Nutritional status of an individual's was determined by anthropometric measurements & comparison of caloric intakes with reference values. Haemoglobin of the students was measured by standard Heamoglobin estimation method (Sahli's method).

Observations and Results

Total 120 students aged between 18-22 years participated in the study, out of which 48 (40%) were male and 72 (60%) were female as seen in table 1.

Table 1: Age and Sex wise distribution of students

Age	Sex		Total
	Male	Female	
18	18	31	49 (40.83)
19	10	33	43 (35.83)
20	18	8	26 (21.67)
21	1	0	1 (0.83)
22	1	0	1 (0.83)
Total	48 (40)	72 (60)	120 (100)

Out of 120 students, 63 (52.50%) take less than recommended calories, 33 (27.50%) take recommended calories and 24 (20.00%) take more than recommended as shown in table 2. It was observed that a 58.33% female student has taken less than recommended calories whereas it was 43.75% for male students. The recommended caloric intake was slightly more in female students 27.17% compared to male students (25.00%) while 31.25% male student has taken more than recommended caloric intake compared to 12.25%female students.

Table 2: Caloric Intake of students

Caloric intake	Male	Female	Total
< Recommended	21 (43.75)	42 (58.33)	63 (52.50)
Recommended	12(25.00)	21 (27.17)	33 (27.50)
>Recommended	15(31.25)	09 (12.25)	24 (20.00)
Total	48 (100)	72 (100)	120 (100)

χ^2 =6.411, p<0.05

Table 3 shows that out of 120 students 97 (80.83%) were non-vegetarian and 23 (19.17%) were vegetarian.

Table 3: Type of food intake

Type of Food	Male	Female	Total
Non-Vegetarian	41 (85.42)	56 (77.78)	97 (80.83)
Vegetarian	7 (14.58)	16 (22.22)	23 (19.17)
Total	48 (100)	72 (100)	120 (100)

χ^2 = 1.085, p> 0.05

In our study we found that 72 students (60.00%) were having normal BMI, 40 (33.33%) were having less than normal and 8 (6.67%) were having more than normal BMI. In 48 male students it was noted that most of the them (56.25%) were having normal BMI, 37.50% were having less than normal BMI and 3 (6.25%) were having more than normal BMI while for female students we noted 62.50%, 30.56% & 6.94% respectively as shown in table 4.

Table 4: BMI of students

BMI	Male	Female	Total
< Normal	18 (37.50)	22 (30.56)	40 (33.33)
Normal	27 (56.25)	45 (62.50)	72 (60.00)
> Normal	3 (6.25)	5 (6.94)	8 (6.67)
Total	48 (100)	72 (100)	120 (100)

χ^2 = 0.379, p> 0.05

In this it was revealed that out of 120 students 63 (52.50%) were having normal Hemoglobin and 57 (47.50 %) were having less than normal Hemoglobin. In male students most of them (81.25%) were having normal Hemoglobin and 18.75% were having less than normal Hemoglobin. In female students most (66.67%) were having less than Normal and 33.33% were having Normal Hemoglobin as mentioned in table 5.

Table 5: Hemoglobin level of students

Hb	Male	Female	Total
< Normal	9 (18.75)	48 (66.67)	57 (47.50)
Normal	39 (81.25)	24 (33.33)	63 (52.50)
Total	48 (100)	72 (100)	120 (100)

χ^2 = 26.516, p<0.0001

Discussion

When compared between male and female students, it was found that the percentage of less caloric intake was more in female students i.e. (42 (58.33%) as compared to female students 21 (43.75%). Sex of the student and caloric intake shows statistical significance (p < 0.05). Irena Collic[10] *et al.*. has also reported the percentage of low caloric intake was significantly lower in women than men (p<0.01). These findings may be due to female students more concern about their attractive and slim body physic. In our study we found that the percentages of non vegetarian male and female students were nearly same and the association between sex of the student and type of food was not statistically significant (p> 0.05). Skeniene L.*et al.* [11] also reported males used excessive amount of animal fats. In the present study it was found that Sex of the student and BMI value are not statistically significant (p> 0.05). Study Carried out Irena

Collic *et al.*[10] found that 82% adolescent were having Normal BMI. Collic Baric *et al.* [12] has reported that 80.4% of the students were having Normal BMI and these are quiet high than the present study (60%). It might be due to difference in life style and eating habits. When compared amongst male and female students, the percentage of less than normal Haemoglobin was more in female students (66.67%) than male students (18.75%) and this difference was statistically highly significant ($p<0.0001$).

Conclusion

This Study was carried out on 120 MBBS students, amongst this 40% were male and 60% were female students. Less caloric intake was recorded in 63 (52.50%) students and this percentage was more in female students. Percentage of non-vegetarian was almost same about 80.83% in male and 77.78% in female students. In term of anthropometric data lower BMI appeared to be greater in male than female students. The percentage of lower hemoglobin was more in female than male students.

Recommendation

In Medical curriculum more weightage should be given to the topics of nutrition.

Students should give more attention towards their diet pattern, so that it will be according to recommended dietary pattern.

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