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Original Research Paper

The Cross Sectional Study To Study Prevalence of Malnutrition in First Year Medical Students

Physiology

KEYWORDS : malnutrition, body mass index, residence , exercise , obesity

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ABSTRACT

Changing global nutrition landscape, influenced by economic and income growth, urbanization, demographic change and globalization, drastic change in diet-related epidemiology is seen in recent decades. So the present study was conducted on metro and non metro cities residing first year medical students. ***Objectives:*** *1.To study the prevalence of malnutrition in first year medical students . 2. To study the association of malnutrition with residence and exercise habits.* ***Materials and methods:****110 students were randomly selected. Out of these 110 students, 35 and 20 were males and females from metropolitan city, whereas 31 and 24 were males and females respectively from non metropolitan city. Prestructured questionnaire was given to the students for personal, dietary, exercise, residential history. Height, weight and BMI measured according to standard guidelines.* ***Conclusion:*** *The prevalence of obesity is more in metropolitan population as compared to their counterpart, with females predominance. Exercise not having association with fitness.*

INTRODUCTION

The double burden of malnutrition is characterized by the coexistence of under nutrition along with overweight and obesity, or diet-related non communicable diseases, within individuals, households and populations, and across the lifecourse.

In 2015, more than 1.9 billion adults worldwide, 18 years and older, were overweight while 462 million were underweight.[(1)]

Special attention has been given to underweight prevention and management since long. However with rapid development and modernization of the country, prevalence of overweight and obesity is also increasing at a very rapid pace. So we have undertaken this study to create awareness not only of underweight but also of overweight and obesity especially in our young medical doctors who are our future care takers.

The body weight depends on the balance between caloric intake and utilization of calories. Obesity results when the caloric value of food intake exceeds energy output. Obesity is an increase in body weight as the result of excessive accumulation of body fat. And increased obesity is the the risk factor for chronic diseases such as hypertension, Type II diabetes mellitus, infertility, hyperlipidemia and increased risk for coronary disease.[(2)]

OBJECTIVES:

To study the prevalence of malnutrition i.e underweight, overweight and obesity in first year medical students .

To study the association of malnutrition with residence and exercise habits.

To study prevalence of exercise awareness among medical students.

MATERIALS AND METHODS :

110 first year medical students were randomly selected who were willing to participate voluntarily and who were ready to give written informed consent.

Out of 110 students , 35 male students and 20 female students were from metropolitan city whereas 31 male students and 24 female students were from non metropolitan city. The unequal number of subjects in each group is due to voluntary participation of the students.

Pre-structured questionnaire was given to the subjects which consists of personal information, personal history, family history, dietary history, exercise history and sleep history.

Height and weight was measured using standard guidelines in meters (m) and kilograms (kg) respectively. Body mass index (BMI) was calculated using Quetelets index i.e BMI = weight (kg)/ height^2 (m^2)

Sr No	Classification	BMI
1	Underweight	< 18.5
2	Normal range	18.5 – 24.99
3	Overweight	>/= 25
4	Obese	>29.9

RESULTS :

Table no 1 showing distribution of study population.

	Metropolitan students	Non metropolitan students
Males	35	31
Females	20	24
Total	55	55

There is unequal distribution of study population due to difference in voluntary participation.

Students were taken between the age group of 17 -19 years. So there was non significant difference in age of different groups, thus all groups were comparable.

Fig 1 shows Out of 55(100%) metropolitan students, 35 (63.64 %) were males and 20 (36.36%) were females. Out of these 55 metropolitan population, 39 (70.91 %) were of normal body mass index, whereas 6(10.91%) were underweight and 10 (18.18 %) were overweight i.e BMI >25.

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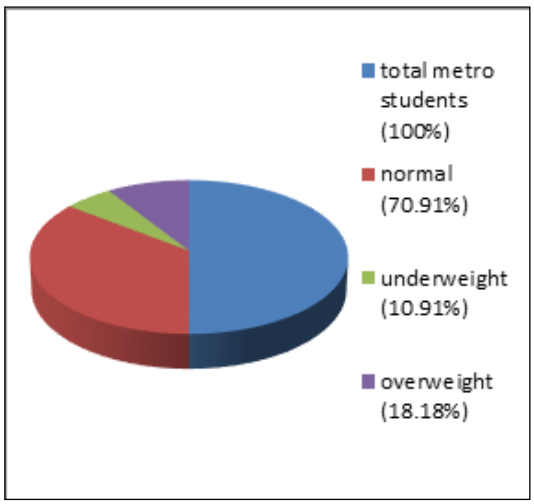
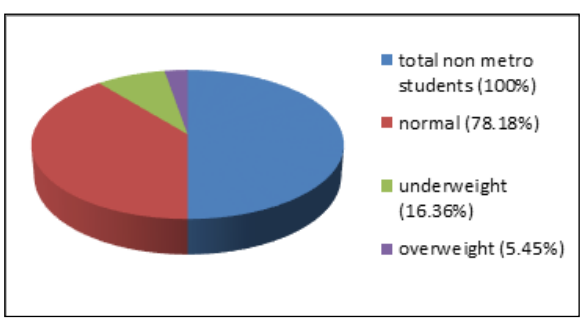
Fig 1 shows pie chart showing distribution of different weight groups in metropolitan students.



And fig 2 shows out of 55 (100%) non metropolitan students , 43 (78.18%) were normal, whereas 9(16.36%) were underweight and 3 (5.45%) were overweight.

Thus, on comparing these two groups, we found prevalence of overweight is more in metropolitan students than non metropolitan studens. While underweight prevalence is more in non metropolitan students.

Fig 2 shows pie chart showing distribution of different weight groups in non metropolitan students.



When inter group comparison is done, prevalence of underweight is more in non metropolitan student whereas prevalence of obesity is more in metropolitan population. There was female predominance of underweight and overweight in non metro females and metro females respectively as compared to male students.

Sr no	Metro Males N =35	Metro females N=20	Non metro males N = 31	Non metro females N = 24
Normal	25 (71.43%)	14 (70%)	25 (80.64%)	18 (75%)
Under-weight	4 (11.43%)	2 (10%)	4 (12.90%)	5 (20.83%)
Over-weight	6 (17.14%)	4 (20%)	2 (6.45 %)	1 (4.17 %)

Thus the overall prevalence of under nutrition is 15 (13.64%), overweight 13 (11.81%) and normal healthy students 82 (74.55%) with zero prevalence of obesity.

We could not establish any relevant association between exercise and weight of the subject because out of 110 students, only 19 students were doing exercise and that too occasionally. Out of these 19 students, 15 were from metropolitan city whereas only 4 were from non metropolitan city.

DISCUSSION:

Malnutrition is not just the underweight conditions. It includes both over nutrition and under nutrition. Under nutrition has been studied extensively and every precautionary measures has been taken along with various national programmes to prevent under nutrition in various age groups from newborn to pregnant females. Over nutrition is the other side of malnutrition coin.

Obesity is a complex multifactorial chronic disease that develops from an interaction of social, behavioral, culture, psychological, metabolic and genetic factors**.**

Obesity is perhaps the most prevalent form of malnutrition in both developing and developed country, it is now so common that it is replacing the more traditional public health problem i.e undernutrition.[3] Overweight in metropolitan cities are mostly due to increased junk food and high calorie food consumption along with sedentary lifestyle and stress whereas underweight can be due to faulty eating habits.

Few studies on medical students were done, they found similar results to our study ie prevalence of overweight being more in females.[3] Some studies found higher prevalence of overweight in males as compared to females.[4] Parekh et al conducted similar study in adolescents of rural and urban area, they found higher prevalence of overweight in urban population but prevalence was more in male than females. [5]

Similar study was done by sparks and sussanne and Jayaraj et al but they found contradictory result i.e prevalence of overweight and obesity was more in non metropolitan population as compared to metropolitan. [6,7,3]

We do not found significant association of weight with exercise like Jayaraj et al.[3] As only 19(17.27 %) of total 110 students (100%) were doing exercise, with only 4 (7.27%) contribution from non metropolitan students, thus awareness is very low in both the groups with contribution more by non metropolitan students.

CONCLUSION:

The total prevalence of malnutrition in first year medical students was 28 (25.45 %) with overweight contributing 13(11.81%) and under weight contributing 15 (13.64%). Also prevalence of overweight is more in females as compared to males in metropolitan students. And prevalence of under nutrition was more in females of non metropolitan students.

We could not establish any association between exercise and weight of the subject. This may be due to small sample size.

The level of awareness about exercise was very less in students with only 19 students (17.27%) doing exercise out of which 15 were from metropolitan cities and only 4 were from non metropolitan cities. Thus there is need to give special education to create awareness regarding health benefits of exercise in medical students as they are our future doctors.

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