



A STUDY ON THE PREVALENCE OF OBESITY AND THEIR CAUSES AMONG MEDICAL STUDENTS AT A PRIVATE MEDICAL COLLEGE IN TAMIL NADU

P.Gracyline Margarat Lydia¹, D.P.Jeeva², Jaideep Jesson Rayapudi³

Pre final year, MBBS, Chennai Medical College¹

Associate professor, Department of Physiology, VMKV Medical College, Salem²

Assistant Professor, Chennai Medical College, Trichy³

Abstract - This study is aimed to determine the prevalence of obesity among medical students and its relationship with their dietary intake and physical activities. This observational study was carried out on 300 medical students during their medical course in a private medical college. Out of the 300 students, 147 were boys & 153 were girls, their body weights and heights were measured, and a standardized questionnaire was used to collect information on their physical activities and dietary intake. Among boys, 28% (41) were overweight, 5 % (8) were obese. Among girls, 17 % (25) were overweight, 9 % (11) were obese. Comparative study was done on the following, Obesity among male & female population, among Vegetarians & Non Vegetarians, among Hostellers & Day scholars, among breakfast skippers & breakfast takers, among fast eaters & slow eaters, among the students who exercise & who do not exercise & among the girls whose menstrual cycle is regular & irregular. Even though the P value is not significant for these variables, there might be genetic factors and/or humeral factors which might be the strong cause for obesity. However in order to maintain normal health, intake of balanced diet & regular exercise are essential. The students have been counseled regarding life style modification & awareness was given regarding the prevention of obesity & its complications so that the future doctors should take care of their health better and be better role models to the society.

Obesity remains a common problem among medical students. In order to maintain normal health, intake of balanced diet & regular exercise are essential even though this present study does not show the significance. However a lot of research work has to be done on genetic factors and humeral factors which might be the strong cause for obesity. If the causes are known, it is easy to prevent the occurrence of obesity and its complication in the future generation.

Introduction:

Overweight and obesity are recognized as an "escalating epidemic" affecting both developed and developing countries⁽¹⁾. Overweight and obesity are important determinants of health, leading to adverse metabolic changes and increase the risk of non-communicable diseases. Obesity is most commonly caused by a combination of excessive food energy intake, lack of physical activity, and genetic susceptibility, although a few cases are caused primarily by genes, endocrine disorders, medications or psychiatric illness^(2,3).

Obesity is often defined as a condition of abnormal and excessive fat accumulation in Adipose tissue to the extent that health may be adversely affected. Body mass index (BMI) (kg/m^2) is a simple index that is commonly used in classifying overweight and obesity in adult populations and individuals^(2,3). Health professionals are important promoters and role models for maintaining a healthy lifestyle for the general population. Studies on medical students and health

personnel in many countries, however, suggest that obesity is a problem among these population groups also^(4,5,6,7).

Aims & Objectives:

- To screen the medical students studying in a private medical college at Tamil Nadu for overweight / obesity using BMI,
- To determine the prevalence of obesity among these medical students
- To verify the effect of social factors and lifestyle on obesity by comparing the physical activities & eating habits between obese & normal individuals

Material and Methods:

- **Study design:** Descriptive study
- **Study Setting:** Private Medical College, Tamil Nadu
- **Participants:** Students of 2009, 2010 & 2011 MBBS batches of a private medical college, Tamil Nadu

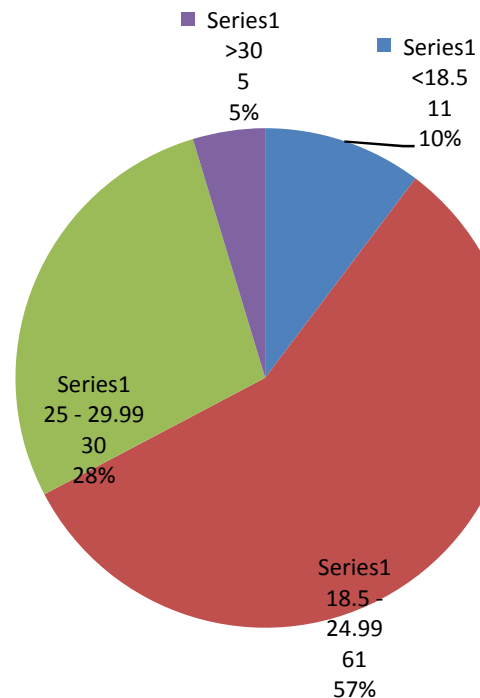


- **Sample size:** 300 students (147 boys & 153 girls)
- **Sampling All willing students**
- **Study variables:** Comparing the incidence of obesity among 1. hostelite and day-scholar, 2. vegetarian and non-vegetarian, 3. breakfast taker and breakfast skipper, 4. slow eater and fast eater(10), 5. Regular exercise doer and irregular exercise doer, 6. women with regular menstrual cycle & irregular cycle
- **Outcome variables: Obesity as assessed by BMI**
- **Data collection tool used:** pre tested questionnaire, weighing machine, measuring tape.
- **Study period :** 5 weeks
- **Data analysis:** Chi-square test⁽⁸⁾, Graphical representations wherever necessary
- **Ethics: Consent from all participants were taken**

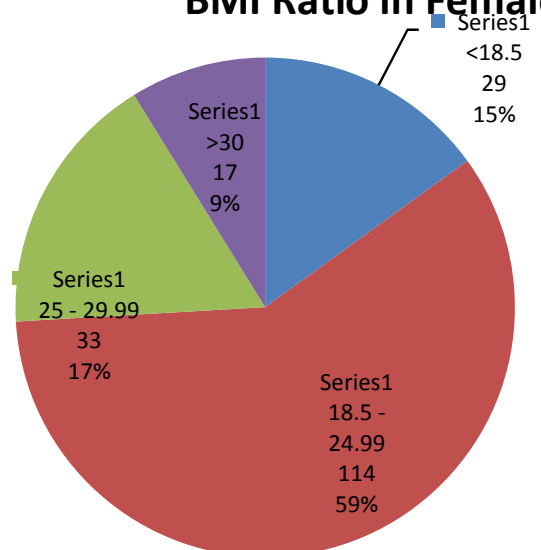
Inclusion criteria: All students willing to participate are included

Observation & Results:

BMI Ratio in Male



BMI Ratio in Female





Gender	Pre obese (BMI 25-29.9)	Obese (BMI > 30)
Male (147)	28% (41)	5% (8)
Female (153)	17% (25)	9% (11)

S.no	Variables	Pre Obese % (BMI > 25-29.9)	Obese % (BMI > 30)
1	Hostelite	19% (57)	7% (21)
	Dayscholar	37% (101)	7% (21)
2	Veg	9% (27)	6% (18)
	Non Veg	22% (66)	8% (24)
3	Breakfast Skipper	25% (75)	9% (27)
	Breakfast takers	19% (57)	6% (18)
4	Slow Eaters	15% (45)	6% (18)
	Fast Eaters	28% (84)	9% (27)
5	Regular Exercise doer	19% (57)	5% (15)
	irregular Exerciser	25% (75)	13% (39)
6	Women with irregular Menstrual Cycle	25% (75)	20% (60)
	Menstrual Cycle Regular	16% (48)	8% (24)

During the study period, 300 students of a private medical college, Tamil Nadu participated in this study. Out of the 300 students, 147 were boys & 153 were girls. **Among girls, 17 % were overweight (pre obese), 9% were obese. Among boys, 28% were overweight(preobese), 5 % were obese.** According to the data collected from these students, the percentage of pre-obese individuals among the **Dayscholar is 37%** which is **more than that of hostelites 19%.**

The percentage of pre-obese & obese individuals among the non-vegetarians is 22% & 8% respectively. Among the vegetarians is 9% & 6%.

Incidence of obese & pre-obesity is **more in the non-vegetarians than the vegetarians.**

The percentage of pre-obese & obese individuals among the breakfast skippers is 25 % & 9 %. The percentage of pre-obese & obese individuals among the breakfast takers is 19 % & 6 %. Incidence of obesity & pre-obesity is **more in the breakfast skippers than the breakfast takers.**

The percentage of pre-obese & obese individuals among the fast eaters is 28 % & 9 %. And the percentage of pre-obese & obese individuals among the slow eaters is 15 % & 6 %. Incidence of obesity & pre-obesity is **more in the fast eaters than the slow eaters.**

The percentage of pre-obese & obese individuals among the students who do not exercise regularly is 25% & 13 %. The percentage of pre-obese & obese individuals among the students who do exercise is 19 % & 5 %. Incidence of obese & pre-obesity is **more in the students who do not exercise regularly than the students who exercise regularly.**

The percentage of pre-obese & obese individuals among the girls whose menstrual cycle is irregular is 25% & 20 %. The percentage of pre-obese & obese individuals among the girls whose menstrual cycle is regular is 16 % & 8 %. Incidence of obesity & pre-obesity is **more in the girls whose menstrual cycle is irregular than the girls whose menstrual cycle is regular.**

The P value is not significant for all these variables in the present study, but a lot of research studies on **Genetic factors and or humeral factors have to be done to find out the cause for obesity.**

Discussion:

Previous study on the incidence of obesity conducted in a Government Medical College, Trivandrum shows the following result, males 30.05 % & females 17.58% were overweight or pre obese (BMI 25-29.9) and 1 % is moderately obese (BMI 30 – 34.99)⁽⁸⁾. A similar study conducted among the Malaysian Medical School shows the following results: 30.1 percent were overweight and obese with a BMI that was equal to or greater than 23.0 kg/m²(4).

The present study on the students of a private medical college, Tamil Nadu shows the following results, Based on BMI, the percentage of pre-obese individuals among the males is 28% and among the female is 17%. The percentage of obese females is 9% & that of obese males is 5%.

From the comparative study on the following, that is Obesity among male & female



population, among Hostellers & Day scholars, Vegetarians & Non Vegetarians, among breakfast skippers & breakfast takers, among fast eaters & slow eaters, among the students who exercise & who do not exercise regularly & among the girls whose menstrual cycle is regular & irregular, no significant co-relation is found as the P value is not significant for these variables, there might be genetic factor or humeral factors which might be the strong cause for obesity. However in order to maintain normal health, intake of balanced diet & regular exercise are essential. The students have been counseled regarding life style modification & awareness was given regarding the prevention of obesity & its complications.

Conclusion:

Health personnel must be role models to the society & their health conditions have to be taken care well in advance during their study period itself. The project stresses the importance of healthy life, which comes as a result of healthy diet intake, regular exercise and stress reduction in the form of meditation and yoga.

Suggestions, if any:

Similar studies can be done with a large sample size. A lot of studies on the Genetic /Humeral factors causing obesity have also to be done in future.

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