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Study Of Relation Of Height And Obesity And Their Clinical Implications.

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ABSTRACT

Obesity is a worldwide challenge these days. Lifestyle change and change of food habits have aggravated the situation. This cross sectional study was conducted in group of people working in NGOs, School teachers, Retired persons. The age group was between 40 years and 80 years. All individuals were from mid to high economy group. All individuals were having an active life. Our study reveals, there was almost no significant difference between BMI values in Males above the average height and below the average height. From the males below average height 32% had BMI less than 23 compared to 12% in Males above average height. 9% of Males below average height had BMI between 23 and 25 (Overweight) as compared to 28% in males above average height. While 59% of Male below average height had BMI more than 25 (Obesity) as compared to 60% in males above average age. So there is no difference with BMI above 25 (Obesity). But the males in group below average height are more in normal BMI strata (below 23) than overweight. There was no much difference between the two study groups. Obesity was almost similar percentage in low height individuals and high height individual, both in males as well as females. So we conclude that Height is not a factor for obesity.

Keywords: Obesity, lifestyle changes, food, habits.

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INTRODUCTION

Obesity is a worldwide challenge these days(Hruby1, Kohl2). Lifestyle change and change of food habits have aggravated the situation. Obesity is especially found in high economy group strata for obvious reasons. Obviously it is more in Developed and developing countries (Flegal3). And it is also observed that Child obesity is area of most concern in developed countries (Kar4, Ng M5, serdula6, Zantping7, Mehan8). Around 300 million people are obese and around 1 billion people are overweight all over the world. If this trend continues, then by 2030, 20% more people will be overweight (Ng m5. Stevenc9, Kelly10).Obesity has many reasons. Some study tried to correlate it with Genetics (Comings11). Overeating, unhealthy food, sedentary lifestyle is known causes of obesity. These are lifestyle causes and can be reversed very easily with changes in your lifestyle (Huges12). So that obesity is largely a preventable disease (wng13). But certain factors like genetic, some diseases like hypothyroidism and certain drugs like Steroids also leads to obesity(Hruby14). Obesity leads to many diseases like Type II Diabetes, Heart and vascular diseases, infertility, arthritis and so on (Chen15). Many studies have shown association of sedentary lifestyle and Overeating with obesity(khosla16). Very few studies have tried to associate obesity with the individual's stature (Alicia17). This study was undertaken to find out whether there is any connection between Obesity and Height of the individual. Individuals having height above average were susceptible or the individuals with height below average. So in this study we tried to find out the relation between height of an individual and obesity in Pune city, Maharashtra state of India.

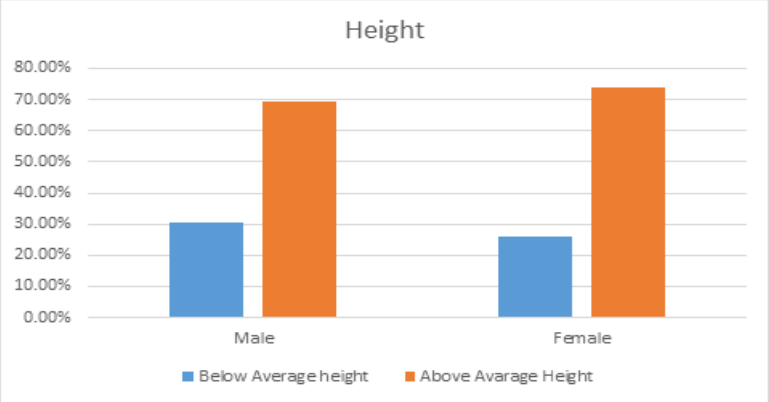
METHOD

This cross sectional study was conducted in group of people working in NGOs, School teachers, Retired persons. The age group was between 40 years and 80 years. All individuals were from mid to high economy group. All individuals were having an active life. After explaining the propose of the project, written consent from each individual were obtained. Confidentiality was assured in all aspects. The information collected was age, gender, height and weight. 133 individuals participated in this study. All individuals were instructed properly for taking the measurements. Weight was measured in kilograms and height was measured in meters. BMI was calculated by dividing an individual's body weight in kilograms by their height in squared meters (Weight Kg/ Height M^2). The average Indian height was considered as 5 feet 5 inches for males and 5 feet for Females. Data was collected and statistically analysed and results were obtained. BMI values were considered for Indian standards. Based on the revised guidelines for Indian population, the individuals were classified as –

Underweight – BMI < 18.5 Kg/M^2
Normal Range – BMI – 18.5 to 22.9 Kg/M^2
Overweight –BMI- 23 to 24.9 Kg/M^2
Obese – BMI >25 Kg/M^2

RESULTS

Male: Height		Female : Height	
Below 5.5"	30.5%	Below 5	26.2%
Above 5.5"	69.5%	Above 5	73.8%



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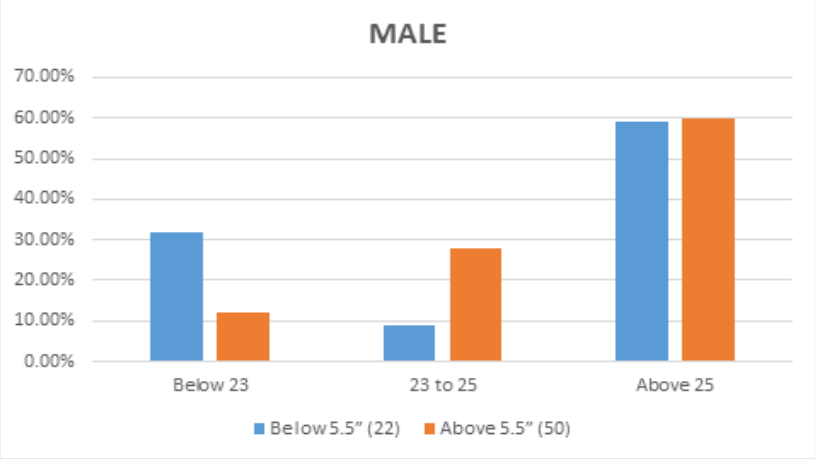
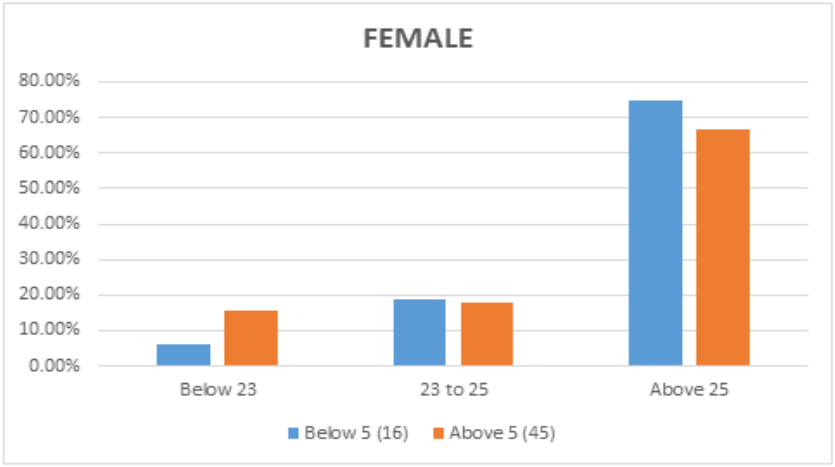
MALE (BMI)	Below 23	23 to 25	Above 25
Below 5.5" (22)	7 (31.81%)	2 (9%)	13 (59%)
Above 5.5" (50)	6 (12%)	14 (28%)	30 (60%)



FEMALE (BMI)	Below 23	23 to 25	Above 25
Below 5 (16)	1 (6.25%)	3 (18.75%)	12 (75%)
Above 5 (45)	7 ((15.55%)	8 (17.77%)	30 (66.66%)



	BMI <23		BMI 23 to 25		BMI > 25	
	BA	AA	BA	AA	BA	AA
Male	31.81%	12%	9%	28%	59%	60%
Female	6.25%	15.55%	18.75%	17.77%	75%	66.66%

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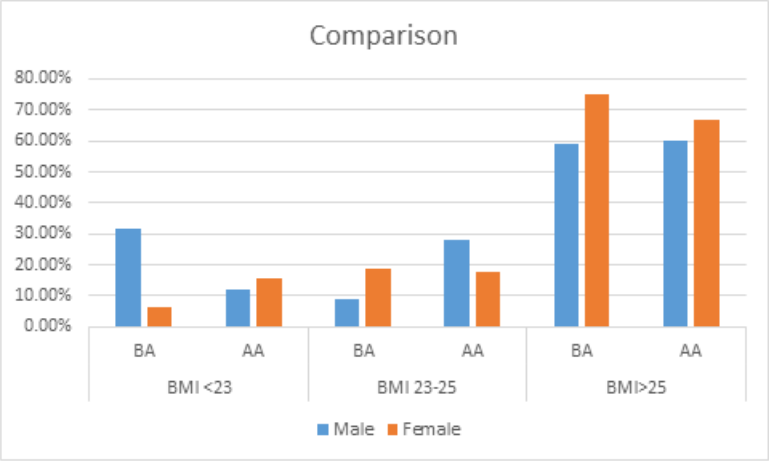

DISCUSSION

Obesity in adults, especially those with the sedentary life is growing very fast. (Kelly10, Huges12). Socioeconomic factor plays a major role in this condition. High socioeconomic group is more vulnerable for obesity and the diseases following it. Obesity is now spreading from developed countries to developing countries. Obesity was correlated with food habits and sedentary lifestyle. A study in Europe has shown High quality nutrition affects positively on height of an individual. (grasguber18). In this study we tried to find out dose height of an individual can be correlated with obesity.

One interesting finding in this study is, individuals above average height were around 70% in Males and 73% in Females. (Mamidi19, Deaton20). So now the parameters of average height should be looked into. This may be the result of high quality of nutrition, proteins in diet.

Our study revealed that, food habits were not healthy in most of the overweight and obese individuals. Frequency of hotel food is very high in most of the individuals, but junk food is very rare in most of them. Individuals following strict healthy diet were only 3 individuals of all.

In this study we found out that, most of the individuals were aware of Healthy lifestyle. Most of them have tried some kind of exercise at least once in their lifetime. Some individuals were exercising regularly and some irregularly. Very few individuals were having complete sedentary life. Some of them were suffering from illnesses like joint pain, high blood pressure, diabetes. Some had undergone various procedures like Joint replacement, Coronary Bypass and Angioplasty to name a few.

Our study reveals, there was almost no significant difference between BMI values in Males above the average height and below the average height. From the males below average height 32% had BMI less than 23 compared to 12% in Males above average height. 9% of Males below average height had BMI between 23 and 25 (Overweight) as compared to 28% in males above average height. While 59% of Male below average height had BMI more than 25 (Obesity) as compared to 60% in males above average age. So there is no difference with BMI above 25 (Obesity). But the males in group below average height are more in normal BMI strata (below 23) than overweight.

From the Females below average height 6.25% had BMI less than 23 compared to 15.55 % in Females above average height. Around 18% of both groups had BMI between 23 and 25 (Overweight). While 75% of Female below average height had BMI more than 25 (Obesity) as compared to 66.66% in Females above average age. So again there is no much difference with BMI below 25 (Normal and Overweight). But a small difference between two groups with BMI above 25(Obese).

If we compare Males and Females of same group, we can make out few differences. Males below average height are more in normal BMI group than Females.

Some studies done in children show higher tendency of Obesity in tall children than dwarf once. (Navti21). However, our study does not show any significant relation of obesity with the height of an individual.

One study results show higher height in normal weigh individuals and BMI increase, height decreased(Rosmari22)

While some study concludes that there is no relation between childhood obesity and adult obesity (Stovitz23). Our study did not have scope to check the childhood obesity.

CONCLUSION

There was no much difference between the two study groups. Obesity was almost similar percentage in low height individuals and high height individual, both in males as well as females.
So we conclude that Height is not a factor for obesity.

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