

A Study on Prevalence of Obesity in Young Adolescent Medicos in a Medical College in Andhrapradesh

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Abstract

Background: Obesity is a morbid disorder which has roots in childhood and continues in life. Obesity is attributed to various diseases. Screening for obesity at intervals at all ages would help possibly, by interventions that can reduce obesity, or the diseases attributed to obesity as a precursor or risk factor.

Aim: To study the prevalence of obesity among young adolescent medicos, admitted and studying in a medical college in Andhra Pradesh.

Materials and Methods: This study was done in students admitted in a medical college. The college had random representation across districts of Andhra Pradesh. 150 students were studied. Body mass index was used as an evaluation tool, which uses height in meter² as denominator and weight in kilograms as numerator. The values were analyzed as average, mean and standard deviation.

Results: Among 150 students, 112 were normal weight, 8 underweight, 23 overweight and 07 were overweight.

Conclusion: Obesity is prevalent in all ages including adolescents and evaluation of obesity should be done at all ages starting from schooling and necessary counselling and lifestyle modifications should be done at the earliest to prevent the onset of diseases.

Keywords: Obesity, Bmi, Adolescents, Medicos, Metabolic Syndrome, Diabetes Mellitus

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Introduction

Overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. A body mass index of over 25 is considered as overweight and over 30 as obese. The issue has grown out of epidemic proportions, with over 4 million people each year dying, being overweight or obese in 2017. In 2016, more than 1.9

billion adults aged 18 years and older were overweight. Of these over 650 million adults were obese. In 2016, 39% of adults aged 18 years and over (39% of men and 40% of women) were overweight. Overall, about 13% of the world's adult population (11% of men and 15% of women) were obese in 2016. The worldwide prevalence of obesity nearly tripled between 1975 and

2016. In 2019, an estimated 38.2 million children under the age of 5 years were overweight or obese [1]. The prevalence of obesity in India varies due to age, gender, geographical environment, socio-economic status, etc. According to ICMR-INDIAB study 2015, prevalence rate of obesity and central obesity, varies from 11.8% to 31.3% and 16.9%-36.3% respectively [2]. Prevalence of Abdominal Obesity (AO) as well as of Generalized Obesity (GO) were high in India.

Extrapolated to the whole country, 135 and 153 million individuals will have GO and AO, respectively [3]. The incidence of overweight and obesity and its related disorders is on the rise in India also and this is believed to be due to decreased physical activity, increased dietary choices, binge eating and lack of awareness about the untoward effect of all these. The increased incidence of nuclear families, working parents and easy availability of packed food and snacks available at nearby localities to households has increased eating habits by many folds.

Looking chubby is viewed as healthy appearance in Indian households. Obesity has direct or indirect relation to incidence of diseases like metabolic syndrome, diabetes mellitus [4], hypertension [5] osteo arthritis, heart diseases [6] strokes [7] sleep disorders etc., As obesity is a modifiable risk factor interventions should be started at earliest possible. The known interventions are mainly self-care like physical exercise, weight loss planned balance diet in proportion to the activity, increasing physical activity and staying away from sedentary life.

All these can be achieved through self-evaluation, health education, modification of lifestyle and frequent re-analysis of health status. This must be done as a lifelong procedure as obesity is known to recur anytime of life. This recurrence will further increase the incidence of diseases related to obesity. Further disease also attributed to hereditary causes which are

modifiable and screening for obesity related disorders can be done frequently with necessary interventions. Obesity can be evaluated easily by measuring body mass index (BMI [8]), waist circumference, skin thickness on back of upper arms or under shoulder blades, rarely DEXA scan and air displacement plethysmography. BMI is an easy tool which can be easily done and doesn't consume excess time or skilled manpower.

Standardized scales can be prepared age wise in relation to height and weight. However, BMI has certain limitations [9]. It doesn't differentiate between lean body mass and fat mass, sex (male or female), athletes and bodybuilders, pregnant people and people having muscle wasting disorders.

Objective to study the prevalence of obesity among adolescent medicos who are from different regions of Andhra Pradesh by using body mass index.

Materials and Methods

Institutional ethical committee approval was obtained prior to the study. 150 students who joined our government college were allotted based on NEET-UG entrance exam, from different places across the state, making it ideal for a study. These students belong to different regions across the state. Necessary consent was obtained after explaining the pros and cons of the study.

As this study is screening of students, no inclusion or exclusion criteria were laid out and only unwilling students were set as exclusion criteria. All the students were included in the study as all the students expressed their consent to be subjects of the study. There were no exclusions. Height and weight were measured using standard scales and tapes. A brief family history of only parents was taken and recorded by a questionnaire. Body mass index (BMI) is a value derived from weight in Kg and height in meters. The ratio of these variables has been studied and following classification was used [10].

Under weight-<18.5

sheet

Normal weight-18.5 to 24.9

Results

Overweight-25 to 29.9

Sex

Obesity -

Among the 150 subjects 87 were males and 63 were females.

Class 1 -30 to 34.9

Age distribution

Class 2 - 35 to39.9

The age distribution of the group studied as depicted in table no. 1. 119 students were in the age group of 18 – 18+, 26 students were in the age group of 19- 19+, and 5 students were of 20 – 21.

Class 3 - > 40

Simple statistics of number, mean and standard deviation were used to compile and interpret the results. The values were compiled and tabulated on Microsoft Excel

Table 1

AGE	Males	Females	Total	Percentage
18 -18+	71	48	119	79.333
19 – 19 +	13	13	26	17.333
20 – 21	3	2	5	3.333

Family history of diseases among parents

23 students had a parental history of diabetes mellitus, 19 had a family history of hypertension, 4 had a family history of heart diseases and 5 had a history of hypothyroidism. The same are represented in Table No.2.

Table 2

Disease	Number	Percentage
Diabetes mellitus	23	15.33
Hypertension	19	12.667
Heart diseases	4	2.667
Thyroid	5	3.333

BMI

Among 150 students, 112 were normal weight, 8 underweight, 23 overweight and 07 were obese.

The same are represented in table no, 3 below.

Table 3

BMI	Males	Females	Total	Percentage
Under weight-<18.5	3	5	8	5.333
Normal weight-18.5 to 24.9	66	46	112	74.667
Overweight-25 to 29.9	14	9	23	15.333
Class 1 obesity-30 to 34.9	3	2	5	3.333
Class 2 obesity- 35 to39.9	0	1	1	0.667
Class 3 obesity->40	1	0	1	0.667
Total	87	63	150	100

Discussion

Obesity is a predisposing factor for many diseases and has been alerted by world health organization as a silent epidemic. BMI can be used as a screening tool for assessing the obesity or people who are likely to be obese in the future. This scale gives us a grouping of underweight, normal weight, overweight and classes of obesity. Identifying overweight and obese cases will help in reducing the incidence of obesity related disorders as necessary modification of diet and lifestyle can be advocated. This study was done to know the prevalence in that group of population who are most likely to advice the general population about the risk and factors and advantages of reducing risk factor of overweight and obesity.

This study group consisted of 42 % as females and 58% as males.

In this study out of 150 subjects studied, 5.33 % were underweight, 74.67% were normal weight, 15.33% were overweight and 4.67 % were obese. Among the obese, 3.33 % were of class 1 type, 0.667 % were of class 2 and class 3 types. The same has been depicted in tableno.3.

Out of 87 males screened, 16.09 % were overweight and 4.6 % were obese. Among 63 females, 14.29 % were overweight and 4.06% were obese.

In the brief family history taken, 15.33 % had history of diabetes among parents, 12.667 % had history of hypertension, 2.887% had history of heart diseases and 3.333 % had history of Hypothyroid disorder. This has been represented in table no. 2.

In a study in south Karnataka by Kotian MS et al, the overall prevalence of overweight among adolescents was 9.9% and obesity was 4.8%. The prevalence of overweight was 9.3% among boys and 10.5% among girls; with 5.2% and 4.3% being obese, respectively. However, according to the Body Mass Index cut off values, 23.9% (215) were underweight (<

18.5), 60.6% (546) were normal (18.5 – 24.9), 11.4% (103) were overweight (25 – 29.9), and 4% (36) were obese (30 and above) [11].

Ranjani H *et al* , in a systematic review opined on the largest study in this age group, the Global School Based survey in 2007 on 8130 students. Overall, overweight prevalence varied between 3 to 24.7 per cent and obesity ranged from 1.5 to 14 per cent in these 28 studies highlighting the wide variability in their prevalence in India. In most studies, slightly higher prevalence rates were reported in boys, compared to girls [12].

Dr. Gayathri D.*et al*, in their study on prevalence of overweight and obesity obtained the prevalence of overweight as 18% (N=27) and Obesity as 6% (N=9) based on BMI [13].

Based on the above references and our study, overweight and obesity exists and even though the incidence and prevalence differ it is indeed important to screen, monitor and intervene in cases of overweight and obesity.

Conclusion

Obesity is an underestimated and neglected risk factor which WHO has warned as a silent epidemic, and it's mentioned by WHO that the risk would triple. As obesity is multi disease risk factor the implications would be grave both on the individual, family, country both physically and economically. So, screening for obesity needs to be done every year or more frequently as part of school teaching curriculum or some program should be designed to screen at house-to-house level and regularly followed for the betterment of individual, family, society and country.

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Limitations

The sample size was not sufficient to authoritatively comment about subregional statistics. As BMI has limitations some erroneous obesity cannot be ruled out.

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