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## Research Article

### PREVALENCE OF OBESITY IN RURAL POPULATION OF ANDHRA PRADESH STATE

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BMI (Body Mass Index), over weight,  
pre-obesity, Morbid obesity

#### ABSTRACT

**Background:** Obesity has become a major problem in both developed and developing countries worldwide including India. **Aim:** To assess the prevalence of general and central obesity in a rural A.P population of South India based on newly proposed cut off level for Asian population. **Methods:** 1538 subjects aged 20 years from rural Andhra Pradesh were randomly recruited to participate in a population-based, cross sectional survey, conducted in 2016.

**Results:** The age standardized prevalence of overweight (BMI 23-24.9 kg/m<sup>2</sup>) and obesity (BMI 25 kg/m<sup>2</sup>) were 15.4% and 38 % respectively. The result shows that prevalence of obesity was more in female (63.6%) than male (36.4%). Based on age distribution in Males, prevalence of obesity was maximum in 45-54 yr group (51.25%) and minimum in 26-34 yr group (8.21%). In Females, maximum 45-54 (38%) and minimum in 15-25 (9.4%). Based on BMI out of 1538 subjects, 1037 were normal (67.4%) whereas 237 (15.4%) were overweight, 258 (18.9%) were pre-obese, 38 (2.8%) were obese and 6 (0.44%) were morbid obese. **Conclusions:** In rural population of Andhra Pradesh, the prevalence of both general and central obesity was high among both sexes with the use of newly proposed cut off points for Asian population.

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#### INTRODUCTION

“Overweight” and “obesity” signify a range of greater weight than what should be normal for individuals. It is calculated on the basis of the height of the individual and determination of body mass index (BMI) and it provides information about health risk. It correlates with the amount of body fat. Body fat can also be measured by other methods such as weight taken underwater, or dual energy x-ray absorptiometry. Besides BMI, waist circumference, lifestyle, such as high blood pressure or lack of exercise sometimes predict obesity-related diseases, such as high blood pressure, high cholesterol, and type 2 diabetes.

##### Aims & Objectives

To find out the prevalence of obesity in general population randomly selected from the outpatient department of general medicine in rural districts of Andhra Pradesh.

#### MATERIALS AND METHODS

BP was measured manually by trained and certified observers using a standard mercury sphygmomanometer with an appropriately sized cuff tied on the person's right arm after resting for 5 to 10 minutes in seated position. While measuring

BP, the cuff was inflated to 30 mm Hg above the pulse obliteration pressure. Two BP measurements with a gap of 30 seconds were obtained as per the criteria adopted from the Trials of Hypertension. Besides Blood pressure, weight, height, and body Circumference. Weight was recorded by trained staff using a certified double balance beam scale placed on a firm level surface. Height was measured from a plane positioned at a 90° angle against a wall-mounted metal stand. All body circumference measurements were taken with an anthropometric centimeter measuring tape.

#### OBSERVATIONS AND RESULTS

Observations and results shown in percentages of adults with BMIs within specific ranges as per the following; Normal weight or underweight (BMI under 24.9; Overweight (BMI of 25 to 29.9); Obesity (BMI of 30+); Extreme obesity (BMI of 40+)

Our result showed 76.4 % of adults had BMIs under 24.9 and were considered normal weight or underweight. Another 15.4% had BMIs from 25 to 29.9 and they were considered overweight. The group with BMIs of 30 or higher were considered to have obesity amounted to 2.79% and those with

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BMI of 40 or higher about. 44% were considered to have extreme obesity.

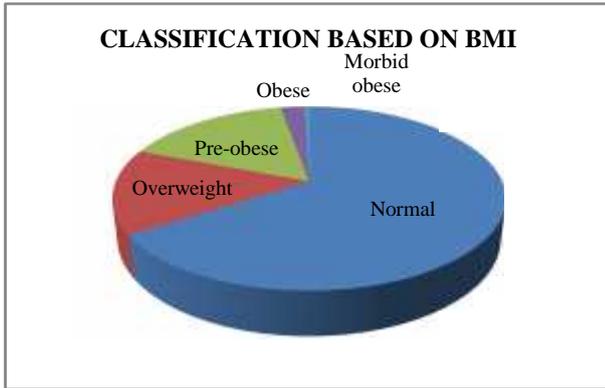


Table 1 showing the various classes based on BMI

Total subjects	= 1538
Over weight	= 237 (15.4%)
Pre-Obese	= 258 (18.9%)
Obese	= 38 (2.79%)
Morbid Obese	= 6 (0.44%)
Normal	=1037 (76.36%)

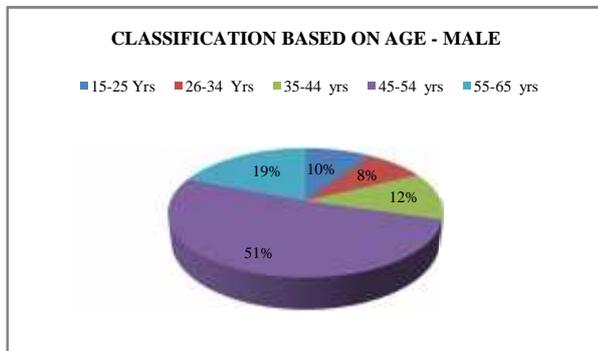


Table 3 Showing the Age distribution of Obesity in Males

Age in years	Total	Percentage
15-25	53	9.46%
26-34	46	8.21%
35-44	67	11.96%
45-54	287	51.25%
55-65	107	19.12%

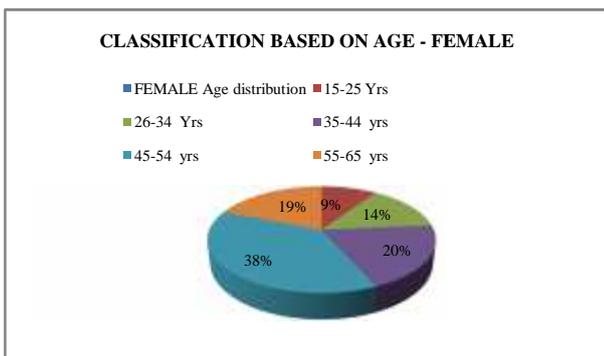


Table 4 showing the Age distribution of Obesity in Females

Age in years	Total	Percentage
15-25	92	9.4%
26-34	139	14.2%
35-44	194	19.8%
45-54	367	37.5%
55-65	186	19.1%

### Age Incidence

Depending on age distribution in males the prevalence of obesity was maximum in the 45-54 yrs group (51.25%) and

minimum in 26-34 yr group (8.21%). In Females, maximum was 45-54yrs (38%) and minimum was 15-25yrs (9.4%).

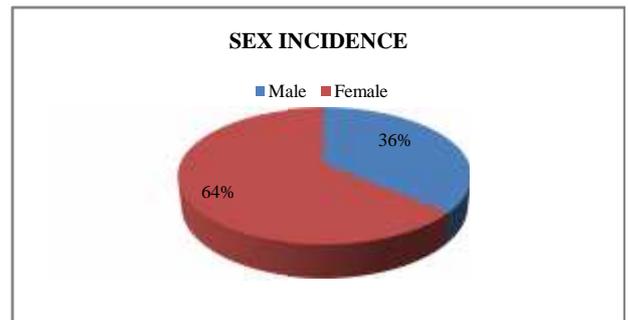


Table 2 showing the Male- Female Sex distribution of Obesity

Sex Incidence:
Male = 560
Female = 978

## DISCUSSION

According to World Health Organization (WHO), obesity is one of the most upcoming public health problems in developing countries<sup>1</sup>. WHO Statistics Report 2012 states that one in six adults is Obese. WHO estimates approximately about 2.8 million individual deaths occur due to overweight or obesity<sup>2</sup>. Obesity is now being considered as a disease which is usually associated with other co-morbidities like diabetes, hypertension, dyslipidemias and cardiovascular disease. Obesity can be classified as generalized obesity (GO) and abdominal obesity (AO). Individuals with obesity are exposed to greater mortality and morbidity compared to normal individuals<sup>4,5</sup>. India having above 125 crore people is one of the largest populated countries of World. Several studies from different parts of India showed an increased prevalence of obesity<sup>6,7,8,9</sup>. But many of these reports have been from areas of urban India. These different studies of Obesity have followed several methods and definitions. Until now, there has been no nationally approved study till date on the prevalence of obesity in India.

The terms "overweight" and "obesity" have specific importance in healthcare. Obesity denotes a range of weight that is greater than what is normal for individuals of given height. Determination of body mass index (BMI) can provide more information about health risks. For adults, overweight and obesity ranges are determined by using weight and height to calculate the body mass index (BMI). It correlates with the body fat. Besides BMI, waist circumference, high blood pressure, high blood pressure, high cholesterol and type 2 diabetes or lack of exercise are also related to Obesity.

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