

AN EPIDEMIOLOGICAL SURVEY ON PREVALENCE OF OBESITY AND DISEASES BURDEN IN COMMON PUBLIC

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ABSTRACT

Objective: The main objective of the study is to know the prevalence of obesity and disease burden in different age groups in general population and also promoting awareness to maintain ideal body weight.

Methods: The study was conducted in the rural areas of Guntur district for a period of 3 months, among the common adult public by filling the questionnaire and also to calculate their BMI using metric formula. The response is then analyzed and the prevalence of obesity and disease burden was calculated in different age groups.

Results: Among the 194 individuals, when assessed on their BMI and existing disease burden, we found obesity is the major problem in age groups of 31-60 years, & the more disease burden is observed in the people having age group more than 60 years.

Conclusion: It is the responsibility of a pharmacist as a health care professional to educate the common public about their disease condition and importance of maintaining normal body weight.

Keywords: Disease burden, Body mass index, Obesity, Questionnaire.

INTRODUCTION

Body mass index (BMI) is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. It is defined as a person's weight in kilograms divided by the square of his height in meters (kg/m²).^[5,10]

The WHO definition is:^[10]

- BMI greater than or equal to 25 is overweight
- BMI greater than or equal to 30 is obesity

Presently, body mass index (BMI) and waist circumference (WC) are two criteria that have been employed for classifying obesity. Associations of obesity classified by BMI, defined as general obesity, with chronic diseases and reduced life expectancy have been well documented. BMI provides the most useful population-level measure of overweight and obesity as it is the same for both sexes and for all ages of adults.^[5,8,10] Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. Overweight and obesity are the fifth leading risk for global deaths. At least 2.8 million adults die each year as a result of being overweight or obese.

In addition, 44% of the diabetes burden, 23% of the ischemic heart disease burden and between 7% and 41% of certain cancer burdens are attributable to overweight and obesity.^[4,5,6,9] The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Based on the data analysis of the 2002 CNHS, Chen et al. reported a 2-5-fold increase in relative risk of adult hypertension and diabetes and a 1.3-2.0-fold increase in relative risk of coronary heart disease and ischaemic stroke in the overweight or obese population measured by body mass index^[2]. In addition, abdominal fat deposition measured by waist circumference (WC) has been suggested as a better indicator of obesity in relation to metabolic syndrome, type 2 diabetes, and cardiovascular diseases than BMI. Risk Factors for obesity are increased intake of energy-dense foods that are high in fat, changes in dietary and physical activity patterns, physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization. Obesity is related to an increased adult morbidity and mortality by leading to a variety of conditions such as diabetes mellitus, hypertension,

psychological disorders and social problems.^[1,2,5,9,10] Proper eating habits like regular intake of breakfast, addition of fruits and vegetables to diet, avoiding of junk foods, intake of low fat diet & fiber rich food and regular physical activity helps to maintain proper BMI.^[3,7] In this study, our main objective is to assess the prevalence of obesity & disease burden in different age groups in general public and also promoting awareness to maintain ideal body weight. As part of that, we have also assessed the disease burden in different age groups which falls as our secondary target.

MATERIALS AND METHODS

The study was conducted in the rural areas of Guntur district for a period of 3 months. More than 1 million people are residing over the Guntur region. Based on their socioeconomic status, rural population is unaware of their health status, and importance of maintaining proper health. This made us to select them as our volunteers in the study. Obesity and over weight are the common conditions to the adult population, which makes them more prone to chronic diseases. This made us to select Adult population into the study. As part of the study, we have prepared a non structured non disguised questionnaire to assess each parameter of our objective. The format of questionnaire was in English (U.K.),

As well as the local language which is more accessible to the volunteers. Consent from the volunteers has been included, which is to be formally signed by them before answering to the questionnaire.

Once the procedure is over, our representatives are allowed to educate them on these matters to bring awareness on maintaining proper BMI. Participant selection was based on inclusion and exclusion criteria.

A total of 194 participants of age more than 18 years were included in the study and the program has been conducted for the duration of 3 months. Age wise distribution of the volunteers is given in Figure 1. All the participants of age more than 18 years and willing to fill their consent were included & those who do not meet the criteria have been excluded from the study. Gender wise distribution of the volunteers is given in Figure 2.

The BMI is calculated by using the formula

Metric BMI Formula:

$$\text{BMI} = \left(\frac{\text{Weight in Kilograms}}{\text{Height in Meters} \times \text{Height in Meters}} \right)$$

The reference values of BMI for underweight, normal weight and overweight are

BMI	Category
18.5 or less	Underweight
18.5 to 24.99	Normal Weight
25 to 29.99	Overweight

Our representatives are allowed to measure the BMI, by using the individual's height, & weight as their primary factor. The other information was attained from the volunteer by answering to the questionnaire. All the participants were randomly distributed and they are made to answer the questionnaire, on matters related to the study. Finally, once they complete the process, our representatives are allowed to counsel them on their disease condition, and explained the importance of maintaining normal body mass index.

RESULTS

When assessed on the obesity of the individuals of different ages, it was found that in people of age between 18years-30years individuals with underweight are 45.53%, individuals with normal weight are 25% and overweight are 29.17%. While in people of age

between 31years-60years individuals with underweight are 17.3%, individuals with normal weight are 30.76% and with overweight are 51.92%. In individuals of age more than 60years underweight individuals shares 40.47%, individuals with normal weight are 28.57% and with overweight are 30.95%.

When concerned about different disease conditions in different age groups, it was found that in people of age between 18years-30years individuals suffering from any type of disease are 29.1% and without any disease are 70.83%, where as in people of age between 31years-60 years it was observed that the people with disease are 64.42% and 35.58% are without any disease, it is quite different in people of age more than 60years i.e. 76.19% are suffering from disease and 23.81% are without any disease.

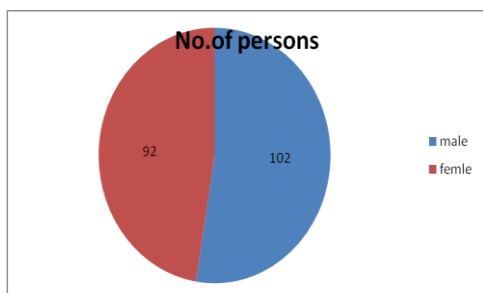


Fig. 1: Gender wise distribution of the participants

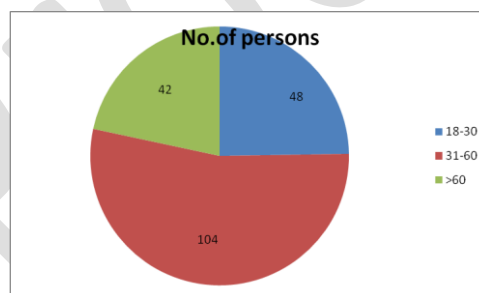


Fig. 2: Age wise distribution of the participants

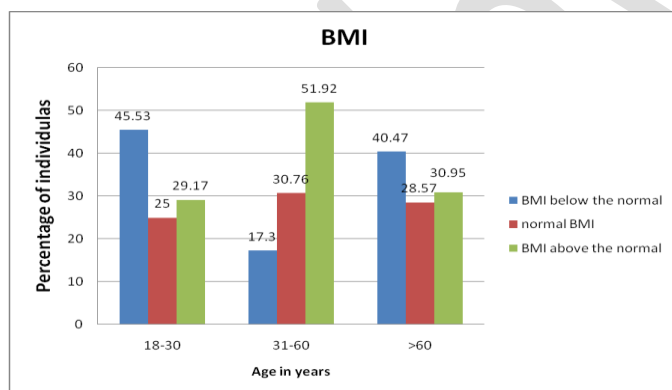


Fig. 3: BMI in different age groups

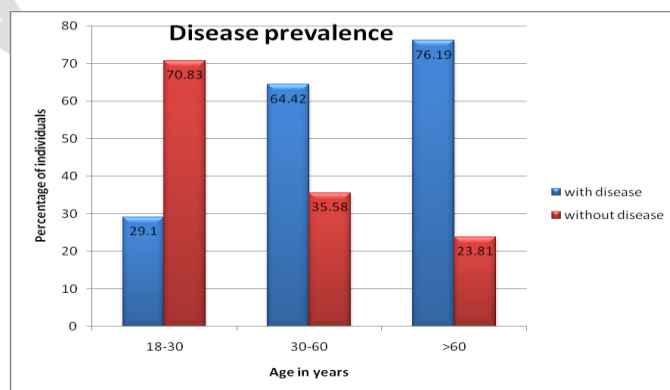


Fig. 4: Disease prevalence in different age groups

DISCUSSION

Overweight and obesity are the fifth leading risk for global deaths. The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Changes in dietary and physical activity patterns are often the result of environmental and societal changes associated with development and lack of supportive policies in sectors such as health, agriculture, transport, urban planning, environment, food processing, distribution, marketing and education. In a study, obesity and its association with co-morbidities in a region has been reviewed by the authors. Comparative studies conducted in a region on adults aged 17 years and older with mean body mass index (BMI) ≥ 28

kg/m were included. The authors have considered 5 electronic databases. Totally, surveys, case-control and cohort studies from January 2000 to July 2010 were evaluated.

Of 720 potentially relevant articles, 10 met the inclusion criteria. Prevalence of obesity was higher in urban than rural subjects with significant increases in obesity rates among women. Inflammatory marker levels were significantly elevated among Africans compared with Caucasians. The co-relationship between obesity and chronic diseases was also highlighted. This systematic review demonstrates that while obesity remains an area of significant public health importance to Africans, particularly in urban areas, there is little evidence of proper diagnosis, treatment and/or prevention.

In our study, we have basically focused on the disease burden & obesity in different age groups. Here when assessed on their BMI, we found it as a major concern in all age groups. Many people are unaware on their normal habitat which is to be considered. These leads to the opening gates to many chronic conditions. When considered to their disease burden, it was found to be an alarming sign to the health care. When assessed age groups from 31-60 years 64.42% people are suffering from disease patterns and 29.1% people from age groups 18- 30 years are suffering from disease pattern, which should also be considered majorly. In other study, the authors determined the prevalence of obesity using criteria based on the BMI and waist circumference and also the relationship between the BMI and body fat. As part of that, the authors conducted this population-based, cross-sectional study. By including random samples of 1,467 men and 1,076 women aged 20–96 years they have assessed obesity according to BMI, & body fat mass were assessed using dual energy X-ray absorptimetry. The authors found according to the BMI, 45.1% of men and 30.2% of women were overweight and a further 20.2% of men and 28.6% of women were obese, which means both criteria indicate that approximately 60% of the population exceeded recommended thresholds for healthy body habits. Finally they concluded that the BMI does not account for differences in body composition, they suggest that gender- and age specific thresholds should be considered when the BMI is used to indicate adiposity.

CONCLUSION

In our study, we found many issues regarding maintenance of proper health, which was a major concern to the health care. It is the duty of a pharmacist as health care professional to concentrate on Clinical oriented modern pharmacy instead of Dispensing oriented traditional pharmacy and provide minimum knowledge on importance of maintaining proper health, which helps in improving Quality living.

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