

## Prevalence of Overweight and Obesity in Women in Urban Area of Raipur Chhattisgarh

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### Abstract

To study the socio-economic factors and Dietary pattern of obese women to estimate the prevalence of overweight and obesity. Methods: Food consumption of the subjects was assessed using a 3 days 24 hour dietary recall method. Anthropometry (height and weight) for calculating the Body Mass Index and comparing with standards.  $BMI = \text{Weight (kg)} / \text{Height (m)}^2$  Results: Study revealed that Obese women Consume more simple carbohydrates and fatty foods, and unsatisfactory knowledge about the healthy/balanced diet. The largest proportion of energy 70% was obtained from carbohydrates followed by fat 20% and protein 10%. Overweight/Obesity was more (51.2%), among those who did not go for Exercise at all. Conclusions: Since the magnitude of overweight and obesity and its consequences are rising and hence there is need introduce health education program regarding the benefits of healthy diet and physical activities in obese women.

**KEYWORDS:** Women, Overweight, Obesity, Diet

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**Introduction-**The term obesity is derived from the latin word “obesus” meaning “having eaten until fat”. It describes an excessive accumulation of body fat (adipose tissue), usually caused by the consumption of more calories than the body requires to fuel its energy requirements. The term “overweight” refers to an increase in body weight above an arbitrary standard, usually defined in relation to height (WHO, 1998; Haslam and James, 2005). The excessive fat accumulation quite often leads to health impairment. Obesity, a chronic disease and prevalent among all age groups, is on the rise among adults especially the women worldwide in both developed and developing Countries (Flegal, 2005). However, its prevalence varies greatly between and within the countries. In many developing countries, obesity is now rapidly increasing and often coexists with chronic under-nutrition (Popkin, 2001).

Many reports on obesity in India have also confirmed the prevalence of obesity to be higher among women than men (Zargar et al., 2000; Misra et al., 2001; Kaluski et al., 2007). Globally, 6.7 percent are underweight, 25.7 percent are overweight and 8.9 percent are obese (Moore et al., 2010). More than 1.1 billion people are estimated to be overweight, of whom around 320 million are obese. WHO projects that by 2015, appoximetely 2.3 billion adults will be overweight and more than 700 million will be obese. Nearly 43 million children under the age of five were overweight in 2010(WHO, 2008). According to data from the National Health and nutrition examination survey

(NHANES, 2007-2008), over two thirds of adults in the United States are overweight and over on third are obese (around 66%overweight and 32%obese).

At all ages and throughout the world, women are generally found to have a higher mean body mass index (BMI) and higher rates of obesity than men. The reasons for these differences are probably biological and related to greater ability of men to deposit more lean than fat tissue when energy imbalance occurs with weight gain. This additional lean tissue is metabolically active and increases the basal metabolic rate in men thereby compensating for the discrepancy between intake and output. Women are naturally fatter, with higher level of essential fats and less lean tissue than men. They have to gain far more weight to accrue the additional lean tissue needed to provide the adaptive gain in basal metabolic activity (James and Reeds, 1997: WHO, 2004).

Obesity in itself has negative consequences for women's health throughout the life cycle. Obesity is associated with more than 30 medical conditions, and scientific evidence has established a strong relationship with at least 15 of those conditions. The growing prevalence of obesity is increasingly recognized as one of the most important risk factors for the development of hypertension, lipid abnormalities and type 2 diabetes mellitus (T2DM), which are known to be independent risk factors for cardiovascular diseases (CVDs) (Ganguly et al., 1997; Hossain et al., 2007; Marinou et al., 2010). The world today is more affluent than it ever was; this means that more people have access to a multitude of dietary options. People now-a-days are also less active than their predecessors, however the calorific content of their diet hasn't decreased; instead it has increased. Diets around the world have drastically changed; we have transitioned from a high-protein, low-fat diet to a high-carbohydrate, high-fat diet. ([www.obesitysurgeryindia.com](http://www.obesitysurgeryindia.com)).

Lifestyle-related factors, such as dietary habits, sedentary behaviour and physical activity play an important role in creating an obesogenic environment. In Saudi Arabia and other countries in the Eastern Mediterranean region, the pattern of food consumption has changed enormously over the past four decades (Popkin *et al.*, 2012). The dietary modifications serve as a guide for the obese to make healthy food choices. The daily diet plan should have an energy deficit of 500 – 1000 kcal/day. Low calorie and very low calorie diets must be used under strict medical care for limited periods. Adequate amount of proteins should be included in the diet to ensure proper metabolism and prevent weakness which is usually experienced by patients after weight loss which is achieved by consuming an unbalanced. Protein rich foods provide a higher satiety as compared to those rich in carbohydrates (other than non- starch polysaccharides). Around 20% of the total energy should be provided by proteins. The diet should not provide more than 15%to 20% of the total energy from fat. The visible fat intake can be curtailed by avoiding fried food, using non-stick cookware/microwave or cooking food by roasting frilling and baking. Butter, cream, pure ghee should be avoided and vegetable oils rich in MUFAs/PUFAs low in SFAs such as live, safflower, corn, and sunflower be used in limited amounts. Emphasis should be laid on the consumption of foods rich in non starch polysaccharides. The obese person may be at risk of developing deficiencies of fat soluble vitamins. Thus, care must be taken to ensure adequate intake of vitamin E leafy vegetable, almonds, B-carotene and vitamin D.

In 2010, the Department of Health and Ageing (DOHA) in Australia promotes healthy eating plans, increased physical activity and behavioral modification as the first approach to manage obesity for individuals, bringing about a range of health benefits. As per WHO (2013) nutrition and physical activity jointly is essential for prevention and treatment of overweight and obesity. Because of its complex etiology, no single approach to weight management is adequate. Considering that obesity is difficult to reverse and that weight reduction and maintenance of weight loss are complex tasks, emphasis should be on lifelong prevention through good nutrition and physical activity. The present study was undertaken the prevalence of overweight and obesity in women in urban area of Raipur city.

**MATERIALS AND MEHTODS:**

The present cross - sectional study was taken to assess the prevalence of obesity among 100 females between the age groups of age 25 to 50 years .The study was carried out in Raipur city Chhattisgarh. All the subjects were apparently healthy, without any signs and symptoms of physical abnormality. Only those subjects who gave written consent were included in this study. Personal information about age, demographic profile, dietary pattern and activity level were collected through a well designed pre tested questionnaire. Pregnant, Diabetic, and patient with chronic renal failure, hypothyroid were excluded from this study. Each subject was contacted personally at their residence. The study protocol was approved by the Institution Ethical Review Committee of the Department of Home Science. Food consumption of the subjects was assessed using a 3-day 24 hour dietary recall method.

The subject were lightly dressed and without shoes and were measured in the morning hours. Body height measured with an anthrop meter in the standing erect position, to the nearest 0.1cm. Body weight was measured on electronic digital scale with an accuracy of up to 0.1 kg. Waist circumference was measured to the nearest 1mm at the level midway between the lower rib margin and the iliac crest at end of normal expiration. Anthropometric measurements height, weights were taken by standard techniques. The assessment of obesity was carried out by using BMI .BMI was calculated from measured values of height and weight for each subject. In general,  $BMI = \text{weight (kg)} / \text{height (m}^2\text{)}$  for the assessment of overweight and obesity following BMI criteria of WHO (2000) used.

$BMI = \text{Weight (kg)} / \text{Height (m}^2\text{)}$

<b>Nutritional status</b>	<b>WHO criteria BMI cut - off</b>
Underweight	<18.5
Normal	18.5 -24.9
Overweight	25 -29.9
Pre-Obese	-
Obese	>30
Obese Type 1 (obese)	30 -40
Obese Type 2 (morbid obese)	40.1 -50
Obese Type 3 (super obese)	>50

Sources: WHO, 2000

## RESULTS AND DISCUSSION

Study revealed that majority of the respondents 32% belongs to middle cast, 45% belongs to high cast and only 23% were from low caste. Maximum number of families 5% had medium size followed by 42% and 8% had large and small size respectively. It is evident that majority of the respondents 55% belonged to income group earning from Rs. 40,001 to 50,000. 42% having monthly income of Rs 50,001 and above and 17% respondents having monthly income 30,000-40,000. A detailed and relevant history of 100 study cases revealed that 56% women were non-vegetarian and 44% were vegetarians. Women eat more sweets and fatty foods. Improper education and dearth of awareness results in poor health of women. 70% women had unsatisfactory knowledge about the healthy or balanced diet. The intake of cereals was 35% more than their respective RDA. Roots and tubers intake was double than their respective RDA. Women take 50% less amounts of green leafy vegetables. The intake of other vegetable and fruits was 5% less than the RDA. A substantial proportion of the women did not take milk than the RDA. The largest proportion of energy 70% was obtained from carbohydrates, followed by fat 20% and protein 10%. Mean intake of iron was half of the RDA. Overweight/Obesity was more 51.2%, among those who did not go for exercise at all. It was found that Obesity/Overweight is higher among those who watched TV/ used Computer  $\geq 2$  hours day. Out of 100 women 35% were overweight, 49 were obese and 15% were of normal.

## CONCLUSIONS:

The prevalence of overweight and obesity along with under-weight among women indicates that Raipur is facing double burden of diseases and prevalence of obesity is increasing year by year. Women suffer a very high burden of nutritional deficiency; but the prevalence of overweight and obesity are also on the rise. Women have worst eating habits. They skip a meal or they eat frequently outsider foods which are rich in calories and fats. Sedentary life style with lack of an exercise schedule tends to make women overweight and obese. changes in life style with adequate physical activity and good dietary practices will help in curbing the alarming rates of obesity and prevent the health care burden placed on family and the country. Since the magnitude of overweight and obesity and its consequence are rising and hence there is need to introduce health education classes and programs regarding the benefits of healthy diet and physical activities in women.

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