

# Frequency of Obesity and its Co-Morbidities in General Surgery Department Capital Hospital Islamabad

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## Abstract

**Objective:** To assess the prevalence of obesity and to investigate obesity-related disorders.

**Methodology:** This cross sectional study was conducted in surgical unit CDA Hospital, 06 months from 20-04-2020 to 20-10-2020. A random and Performa based study was conducted from 20<sup>th</sup> April 2020 to 20<sup>th</sup> Oct 2020 on 300 patients All this information was recorded on a predesigned Performa. Data was analyzed using SPSS-20.

**Results:** Total of 300 patients with in duration of 06months was selected in General Surgery Department Capital Hospital Islamabad. The age of the patient varied from 07 to 87 years having mean value of 46.02. There were 180(60%) females and 120(40%) males. The minimum height for the patient was 3.8 feet and maximum was 6.3 feet having mean of 5.2 feet. The weight of the patient varied from 22kg to 180kg with mean value of 74.39kg. Body mass index (BMI) range from 15.8kg/m<sup>2</sup> to 80kg/m<sup>2</sup> having mean value of 28.2kg/m<sup>2</sup>. Percentage of obesity related co-morbidities were found to be higher in hypertensive and least with Ischemic heart disease.

**Conclusion:** Obesity is a growing health problem. It is Health hazard. Patients with higher BMI categories had a higher incidence of Co-morbidities. Based on the study result, it is recommended that weight, height and Body Mass Index should be assessed regularly to prevent obesity and its comorbidities.

**Key Words:** Body Mass Index (BMI), Obesity, Frequency.

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## Introduction

Worldwide, obesity is a significant and curable cause of mortality, and both adult and child obesity rates are rising.<sup>1,2</sup> It is widely acknowledged as one of the most important public health issues of the twenty-first century.<sup>1,2,3</sup> This medical disorder is characterised by the buildup of extra body fat, which may be harmful to health.<sup>1</sup> Obesity is associated with a number of diseases and disorders, including osteoarthritis, type II diabetes, obstructive sleep apnea, several types of cancer, and cardiovascular disease.<sup>4,5</sup>

Diet, exercise, automation, urbanisation, genetics, drugs, mental illnesses, economic policies, endocrine

disorders, and exposure to hormone-disrupting substances are some of the factors that contribute to obesity.<sup>1,6,7,8</sup> Body mass index (BMI), which is determined by dividing the weight of an individual by their height squared, is commonly used to determine whether an individual is obese if it is greater than 30 kg/m<sup>2</sup>. The category of overweight is defined as a BMI between 25-30 kg/m<sup>2</sup>.<sup>1</sup>

## Material and Methods

The cross-sectional study took place at CDA Hospital's surgical unit from 20 April to 20 October 2020. Non probability, consecutive sampling technique was used, using 95% confidence level, 5% margin of error. Demographic information (name, age, sex, height etc)

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were recorded, then patients were assessed for their obesity by calculating their BMI, using standard formula and categorized them according to International definition of overweight and obesity.

All the obesity related co-morbidities like hypertension, type II diabetes mellitus, Cholelithiasis, gout, osteoarthritis, ischemic heart disease, sleep apnea were recorded as percentage of their frequency and Prevalence. All this information was recorded on a predesigned Performa. Data was analyzed using SPSS-20. Quantitative variables like age, weight, height, BMI were calculated as Mean. Qualitative variables like gender, obesity, co-morbid were presented as frequency and percentage.

## Results

It was observed that percentage of obesity associated diseases of (Hypertension, Diabetes) were highest in forty above age group. having percentage 65% and 60% respectively. Among individuals aged 50 years and above, Cholelithiasis was found to be the second most common comorbidity associated with obesity, with a prevalence rate of 55%.

Sleep apnea was identified as another significant comorbidity, with a prevalence rate of 50% among patients aged 40 years and above. In the same age group, obesity was found to be associated with Osteoarthritis and gout, with prevalence rates of 45% and 40%, respectively. In the 30-plus age group, obesity was found to be associated with Ischemic heart disease in 25% of patients.

There were 180 (60%) females and 120 (40%) males. There were 75 (25%) patients found to be overweight BMI of more than 25 and less than 29.9, 60 (20%) patients had BMI (30- 34.9), 33 (11%) patients had BMI (35-39.9) and 12 (04%) patients had BMI more than 40

	Minimum	Maximum	Mean
Age (years)	07	87	46.02
Weight (kg)	22	180	74.39
Height (feet)	3.8	6.3	5.2
BMI (kg/m <sup>2</sup> )	15.8	80	28.2

**Table II: Standard BMI used to clarify obesity in random study of 300 patients.**

BMI	Frequency	% age
25-29.9 kg/m <sup>2</sup>	75	25
30-34.9 kg/m <sup>2</sup>	60	20
35-39.9 kg/m <sup>2</sup>	33	11
>40 kg/m <sup>2</sup>	12	4

from total of 300 patients as in table II. There was higher prevalence of hypertension, diabetes, cardiovascular diseases associated with higher BMI.

## Discussion

Numerous chronic physical and mental health disorders include obesity as a major risk factor. It's a prevalent misconception that being overweight has fewer serious health effects than being obese.<sup>9</sup>

Obesity is linked to cardiovascular diseases, such as angina and myocardial infarction, and evidence suggests that 21-35% of ischemic heart disease cases are due to obesity.<sup>10,11</sup> Various types of heart problems are associated with obesity<sup>1</sup>, including coronary artery disease resulting from cholesterol plaque buildup in the heart's arteries.

More than 85% of individuals with a BMI above 25 have hypertension, and obese people are five times more likely than normal-weight individuals to have the condition. Additionally, obesity is linked to higher LDL cholesterol and lower HDL cholesterol, which results in a 2.3-fold increase in the risk of venous thromboembolism.

Obesity is connected to a number of issues that arise during pregnancy, including bleeding, infection, extended hospital stays for the mother, and increased newborn NICU care. Obese women undergo C-sections at a rate that is more than twice as high as those of normal weight women. They are also more likely to have preterm births and infants with low birth weights.

Obesity is also linked to type 2 diabetes, which is often referred to as "diabesity,"<sup>13</sup> and is firmly established without a healthy diet and appropriate exercise. However, even small reductions in body weight can improve insulin sensitivity and lower the risk of developing cardiovascular and metabolic conditions, such as type 2 diabetes, heart disease, and cancer.

Obesity causes the amount of cholesterol in bile to rise, leading to the formation of stones, particularly in women with higher body mass index (BMI).<sup>13,14</sup> Cholesterol plays a role in the formation of gallstones, and it is recommended to reduce the intake of foods with high saturated fat content to minimize this risk. Weight loss is essential in treating the disorder because obesity is a risk factor for obstructive sleep apnea.<sup>13,15</sup>

The results showed that men with a body mass index (BMI) between 30 and 35 were 2.3 times more likely to develop gout than men with a BMI between 21 and 23.<sup>16</sup>

Both weight-bearing and non-weight-bearing joints with arthritis and musculoskeletal pain are more likely to develop in obese people. Exercise and losing weight can lower the risk of osteoporosis, and obese persons are two to four times more likely to experience lower back discomfort than people of normal weight. The weight cycle includes periods of weight loss and gain associated with decreased energy intake and increased physiological urges to eat during and after caloric restriction.<sup>17</sup>

Obesity prevention necessitates a multidimensional approach that includes interventions at the community, family, and individual levels.<sup>1,16</sup> Health practitioners advise diet and exercise modifications as the main therapy.<sup>4</sup> Diet quality can be improved by eliminating energy-dense foods, such as those heavy in fat or sugar, and increasing dietary fiber intake.<sup>1</sup> Large-scale research have discovered an inverse link between energy density and the energy cost of foods in developed countries<sup>19</sup>, with people with low incomes living in areas that are called "food swamps" or "food deserts" having less access to nutritive foods.<sup>20</sup>

Medications can be used, alongside a suitable diet, to reduce appetite or decrease fat absorption, but those that focus on decreasing fat have a greater potential for achieving weight loss but the results are not very significant; In the absence of a healthy diet, regular exercise, and medicine, gastric balloons or surgery may be used to shorten the intestine or stomach, making you feel fuller more quickly or limiting your capacity to absorb nutrients from meals.<sup>22,23</sup>

Morbid obesity results in multiple comorbidities and an increased mortality rate so surgery is the most effective longterm therapy.

## Conclusion

Obesity is a growing health problem. It is health hazard. The prevalence of obesity is increasing around the globe. It has become one of the emerging and serious health concerns of the 21st century. The incidence of obesity in Pakistan is influenced by various factors, including urbanization, which is associated with changes in dietary patterns towards energy-dense foods, as well

as a sedentary lifestyle. Another important factor is the high prevalence of oil and fats in traditional Pakistani cuisine, which may contribute to the development of obesity.

Based on the study result, it is recommended that weight, height and Body Mass Index should be assessed regularly to prevent obesity and its comorbidities.

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