International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Review: Obesity, A Global Epidemic Affecting Humankind

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Abstract: ***The obesity epidemic in India has nearly tripled in the past ten years, affecting over 100 million individuals [2]. Considering the present statistics and tendencies, together with the relationships between obesity and various physical and mental health issues, it is justifiable to view obesity as a public health epidemic.***

Keywords: obesity, India, public health, epidemic, physical, mental health

1. Introduction

The World Obesity Atlas survey (2024) indicates that no country is free to the effects of obesity, with rates rising sharply in low- and middle-income nations, particularly among youth [1]. The obesity epidemic in India has nearly tripled in the past ten years, affecting over 100 million individuals [2]. Considering the present statistics and tendencies, together with the relationships between obesity and various physical and mental health issues, it is justifiable to view obesity as a public health epidemic. This issue not only impacts individuals' health and quality of life but also imposes a significant financial strain on national healthcare systems.

2. Definition

Obesity is excessive fat accumulation that increases the risk of comorbidities [3] (WHO). For healthy men and women, total body fat should be below 20–25%, respectively. When fat accumulation leads to body weight increasing by 10–20% above normal levels, it results in obesity [4].

3. Causes

Various factors, including eating habits, the degree of exercise and physical activity, basal metabolic rate, and hereditary, hormonal, social, environmental, and psychosocial factors, control weight. Some people may experience weight gain due to certain drugs and disorders.

Diet: Eating more food than one needs physiologically leads to obesity. Weight gain can occur steadily even with modest, persistent rises in fat and calorie intake. For example, a 0.5% increase in food intake over ideal calorie requirements can lead to a 1 kg annual weight gain. However, each person's relationship between dietary habits and gain in weight might be quite distinct. ***Physical inactivity and lack of exercise*:** Technological advancements, improved transportation, and higher living standards have contributed to a decrease in physical activity. People have become more sedentary with everything available at their fingertips. The Lancet Global Health published research revealing that over half of adults in India lack physical activity [5].

***Genetics*:** Variations in genetics and epigenetics impact the brain systems that regulate appetite as well as metabolic pathways [6]. Genes guide food intake by controlling the signals sent by hormones like insulin, leptin, and ghrelin. This will result in variations in metabolism and eating habits, leading to intense hunger and the development of hyperphagia in those affected [7].

***Socio-Environmental Factors*:** People who live in an obesogenic environment are more prone to developing obesity than others. This includes easy availability of high energy, junk foods and drinks at affordable prices, a sedentary lifestyle at work, at home, and in between, more screen time and fewer activities during leisure time, social and cultural beliefs about body image and dietary practices, and the influence of friends, society, and advertisements.

Psychosocial Factors: Emotional disturbances, including anxiety, hopelessness, and low confidence, may lead to overeating, a lack of interest in physical activity, and poor self-care. Put another way, people frequently turn to food as a source of solace during stressful situations, which can result in overindulgence and weight gain.

Certain disease conditions, medications, and imbalances of hormones also play a role in weight gain.

Assessment of weight

***Body mass index*:** The WHO Asia-Pacific region classified individuals with a BMI ≥23 kg/m2 as overweight and those with a BMI ≥25 kg/m2 as obese, acknowledging that Asians experience higher morbidity and mortality rates despite lower BMI and waist circumference (WC).

The WHO classifies weight based on BMI. Body Mass Index (kg/m2)

Classification	WHO	Asian Pacific region
Healthy weight	18.5-24.9	18.5-22.9
Overweight	25-29.9	23-24.9
Obese	>30	>25

***Waist-to-hip ratio*:** We use the waist-to-hip ratio (WHR) as a metric to evaluate abdominal adiposity and the health risks associated with obesity. It is computed by dividing the waist and hip circumferences. For men, a waist-to-hip ratio (WHR) of 0.95 or less is considered healthy, whereas for women, it is 0.80 or lower. People who accumulate more fat around their waist are more susceptible to cardio-metabolic diseases and premature death than those who distribute their fat around their hips and thighs. Notably, this risk persists even in individuals with a normal BMI.

Obesity and health risk

Obesity may contribute to several significant co-morbidities, resulting in physical and psychological health impairment. Compared to those with a normal body weight, obese people are more likely to acquire disorders like hypertension, type 2 diabetes, dyslipidaemia, heart disease, certain types of cancer, and musculoskeletal problems.

Cardiovascular diseases: Individuals with obesity, particularly those with abdominal fat, are more susceptible to coronary artery diseases, arrhythmias, and especially sudden cardiac death. Obesity affects both men and women, with the waist-to-hip ratio serving as a more reliable indicator than BMI. Obesity causes vascular changes, endothelial dysfunction, and kidney compression, all contributing to hypertension. This increases the risk of cardiovascular diseases and stroke [8].

Type 2 Diabetes: Individuals with obesity are six times more likely to develop prediabetes and type 2 diabetes compared to those with a normal BMI [9]. An obese person develops insulin resistance due to excess lipid storage and the release of pro-inflammatory substances. While excess adipose fat alters beta cell function and increases diabetes risk, effective weight loss can enhance insulin sensitivity [10].

Cancer: Obesity is associated with cancer cases, as excess fat cells promote inflammation and cell division. The most common cancers linked to obesity include breast, colorectal, and endometrial cancers, among others.

Musculoskeletal Problems: Obesity leads to osteoarthritis, especially in the knees, and it has a positive correlation with lower back pain. Weight loss and proper posture can help protect musculoskeletal health.

Respiratory Issues: Obese individuals often experience respiratory problems, such as asthma, respiratory infections, and sleep apnoea, which can be difficult to manage.

Psychosocial Effects: Weight stigma contributes to bias and discrimination, and it negatively affects the feeling and psychosocial quality of the individual. Obesity can influence cognitive aspects such as memory and concentration. This may further affect daily functioning and overall quality of life. Many obese individuals struggle with body image issues, which can lead to poor self-esteem and a distorted perception of themselves. This affects their overall life satisfaction and willingness to engage in social activities. The physical limitations associated with obesity, such as decreased mobility and chronic health conditions, can hinder participation in activities that enhance social interaction and emotional well-being.

Prevention and management

Obesity management has evolved to emphasize balancing energy consumption and spending. While preventable, obesity requires a complex, multi-faceted approach, starting with lifestyle changes in childhood.

***Assessment and Management*:** The first step involves assessing the degree of obesity and the individual's health status. The second step is controlling weight to normal and maintaining it, thus reducing the risk of lifestyle diseases associated with obesity.

***Lifestyle Modification*:** Maintaining a healthy lifestyle is the key element in obesity management.

***Dietary Habits*:** Changing eating patterns is essential for weight reduction. The convenience and affordability of junk food contribute to unhealthy eating. Some of the dietetic tips include:

- Reduce calorie-dense foods
- Increase the nutrient-dense portion.
- Drink plenty of water.
- Avoid sugary, salty, and oily foods.
- Reduce portion size; consider a small and more frequent diet than three heavier meals.
- Ensure a healthy breakfast and avoid late-night meals.

Gradual weight loss of about 1 kg per week is ideal, and vitamin and mineral supplements may be necessary to support restricted diets.

***Physical Activity*:** Modern lifestyles often reduce physical activity. Engaging in regular exercise is vital for weight management and overall health. The WHO recommends 150 to 300 minutes of moderate-intensity aerobic activity weekly [3]. This can include activities such as brisk walking, dancing, yard work, bicycling, and outdoor playing, among others. The amount, type, and intensity of exercises vary from person to person based on their requirements. Muscle-training exercises also help build up muscle and reduce weight.

***Behavioural Modification*:** It is a systematic way of enhancing healthy lifestyle habits by constant self-monitoring, stress management, and cognitive restructuring. Family and social support systems may provide motivation; still, self-determination is a vital element in reducing and maintaining a healthier weight in obese people. Encouraging mindful eating and avoiding distractions during meals can also help manage calories.

***Cognitive Restructuring*:** This technique helps individuals adjust their expectations regarding weight loss and enhances self-esteem, promoting commitment to weight management.

***Support Groups*:** Building connections with people experiencing comparable struggles might help support one another emotionally and promote the sharing of successful weight loss techniques.

Government strategies:

- School policies: School policies should ensure that students receive nutritious food during school meals.
- Controlling food prices: It involves increasing the availability of healthy and nutritious food at a cheaper rate and taxing junk foods.
- Stop advertising: restrict or limit the promotion of unhealthy foods.
- Food labeling: made it mandatory for all food types to display their caloric value and mention if it's junk food.
- The built environment should provide a safe and friendly space in the community for performing aerobic exercises.
- Health promotion campaigns: Implement regular programs to educate the public about the significance of healthy lifestyle practices.

4. Conclusion

Adopting healthy lifestyle modifications can lead to weight reduction, which is not an easy task. Consistency in behavior is significant to maintaining the right weight throughout life, and thus it can prevent physical and psychological disorders associated with obesity. It also improves your quality of life and reduces the economic burden of healthcare costs.

References

[1] World Obesity Atlas 2024 | World Obesity Federation. Available from: https://www.worldobesity.org/news/world-obesity-atlas-2024
[2] Obesity in India: A Growing Health Concern Available from: https://sgrh.com/blog/obesity-in-india-a-growing-health-concern
[3] The World Health Organization. Available at: https://www.who.int/health-topics/obesity
[4] Krishna das KV. Text book of medicine, 6th edition 2017; 1:186-191.
[5] Lancet Global Health. Available from: https://indianexpress.com/article/health-wellness/indians-physically-unfit-lancet-study-9415383/
[6] Tirthani E., Said MS, and Rehman A. Genetics and obesity. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024. Available from: http://www.ncbi.nlm.nih.gov/books/NBK573068/
[7] Genes and obesity | CDC Available from: https://archive.cdc.gov/www_cdc_gov/genomics/resources/diseases/obesity/obesedit.htm
[8] Powell-Wiley TM, Poirier P, Burke LE, Després JP, Gordon-Larsen P, Lavie CJ, et al. Obesity and Cardiovascular Disease: A Scientific Statement From the American Heart Association. Circulation [Internet]. 2021 May 25, 143(21). Available from: https://www.ahajournals.org/doi/10.1161/CIR.0000000000000973
[9] Yale Medicine [Internet]. Prediabetes Is on the Rise—But It Can Be Reversed. Available from: https://www.yalemedicine.org/news/prediabetes
[10] Cleveland Clinic [Internet]. Diabesity: How Obesity Is Related to Diabetes. Available from: https://health.clevelandclinic.org/diabesity-the-connection-between-obesity-and-diabetes