International Journal of Home Science 2025; 11(1): 355-358

International Journal of Home Science

ISSN: 2395-7476
IJHS 2025; 11(1): 355-358

www.homesciencejournal.com
Received: 12-12-2024
Accepted: 15-01-2025

Dr. Kiran Purohit
Assistant Professor, Guest Faculty, Department of Home Science, Deedwaniya Ramidevi Jasraj Government Girls College, Balotra, Rajasthan, India

Corresponding Author:
Dr. Kiran Purohit
Assistant Professor, Guest Faculty, Department of Home Science, Deedwaniya Ramidevi Jasraj Government Girls College, Balotra, Rajasthan, India

Obesity: An introduction and evaluation

Kiran Purohit

Abstract
This research paper is an attempt to investigate about the prevalence of obesity worldwide. The characteristics are high cholesterol, fatty acid levels, insulin desensitization, high BP and extravagant adipose mass accumulation. Presently more than a billion people are overweight and around 300 million are clinically obese. For multiple secondary conditions obesity is responsible like cardiovascular disorder, cancer, insulin pathological resistance, and retinopathy. This paper is also highlighted the classification of obesity, factors modulating obesity, and causes in risks in childhood obesity.

Keywords: Obesity, worldwide prevalence, evaluation

Introduction
Obesity is a colossal dilemma distressing the health and well- being of the world's population. This is not a new problem, but hastily increasing one among children, adolescents and adults. The reasons for this growth are multi-factorial; each must be appreciated and accurately addressed before resolutions to obesity are practical. It is a pathological condition in which excess body fat accumulated, leading adverse effects on health and life expectancy. It is a chronic disorder with complex interlinkage between hereditary and environmental aspects. The characteristics are high cholesterol, fatty acid levels, and disproportion in metabolic energy, insulin desensitization, lethargy, gallstones, high BP, out of breath, emotional & social issues, excessive adipose mass assemblage with hyperplasia & hypertrophy.
Recently, Obesity had affected 12.5 million children and teens in the U.S. While Kuwaiti and Saudi adolescents are among the highest overweight 40% and obese 46% in the world. Reports from continent, as Australia also showed increased proportion of overweight in 2011 from past 10 years, from 20% in mid adolescence to 33% at the age of 24 years and obesity increased from 3.6% to 6.7%.

Classification of Obesity
It is a clinical disorder in which extra body fat has gathered to the level that it may have negative influence on health. It is elucidated by BMI and also assess in terms of distribution of the via the ration of waist-hip and whole cardiovascular risk factors. BMI is interconnected to both body fat percentage & total body fat. Healthy weight varies with age and sex in children. Obesity in children and adolescents is defined not as an absolute number but in relation to a historical normal group, such that obesity is a BMI greater than the BMI calculated by dividing the subject's mass by the square of his or her height, typically expressed either in metric or US ("Customary" units) Metric: BMI= kilograms/meters^2; US customary and imperial: BMI= lb *703/in^2) where lb is the subject's weight in pounds and subjects's height in inches (Table-1).

Factors Modulating Obesity
Recent epidemiological trends in obesity indicate that the primary cause of this trend lies in environmental and behavioral changes, especially related to eating behavior. These factors combine impacts the health status and results in obesity. Primary cause behind these factors is changing trend in socio economic status. Being financially sound may allow the adolescents to indulge in practice of purchasing calorie dense fast foods and a lifestyle involving less of physical activity and more in- door activities like playing games on computer, watching T.V. etc.

In addition, the cultural beliefs especially in India, like being overweight considered as marker of prosperity and good health may play a vital role.

The prevalence of overweight and obesity among children and adolescents aged 5- 19 has mounted affectedly from just 4% in 1975 to over 18% in 2016. The rise has occurred equally among both boys and girls: in 2016, 18% of girls and 19% of boys were overweight. In 2016, more than 1.9 billion adults aged 18 years and older were overweight. From this data we determine that over 650 million adults were obese. In 2016, 39% of adults aged 18 years and over (39% of men and 40% of women) were overweight. Largely, about 13% of the world's adult population (11% of men and 15% of women) was obese in 2016. The worldwide prevalence of obesity virtually tripled between 1975 and 2016 (World Health Organization, 2019).

In 2016, an expected 41 million children under the age of 5 years were overweight or obese. Once considered a high-income country problem, overweight and obesity are now on the growth in low and middle-income countries, predominantly in urban locales. In Africa, the digit of overweight children under 5 has increased by nearly 50 per cent since 2000. Nearly half of the children under 5 who were overweight or obese in 2016 subsisted in Asia. Over 340 million children and adolescents aged 5- 19 were overweight or obese in 2016. Despite the fact that less than 1% of children and adolescents aged 5-19 were obese in 1975, more 124 million children and adolescents (6% of girls and 8% of boys) were obese in 2016. Overweight and obesity are connected to more deaths worldwide than underweight. (World Health Organization, 2019).

Table 1: Classification of Obesity

Body Mass Index	Classification
<18.5	Underweight
18.5-24.9	Normal weight
25.0-29.9	Overweight
30.0-34.9	Class 1 (Obese)
35.0-39.9	Class 2 (Severe Obesity)
≥ 40.0	Class 3 (Morbid Obesity)
≥ 40-50	Super Obese

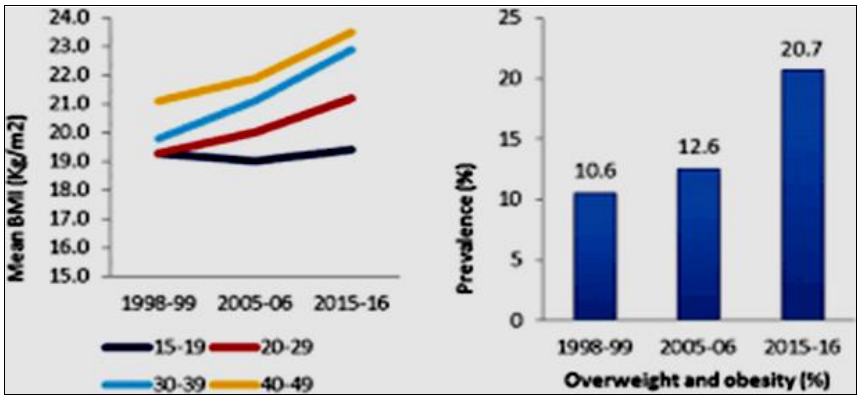
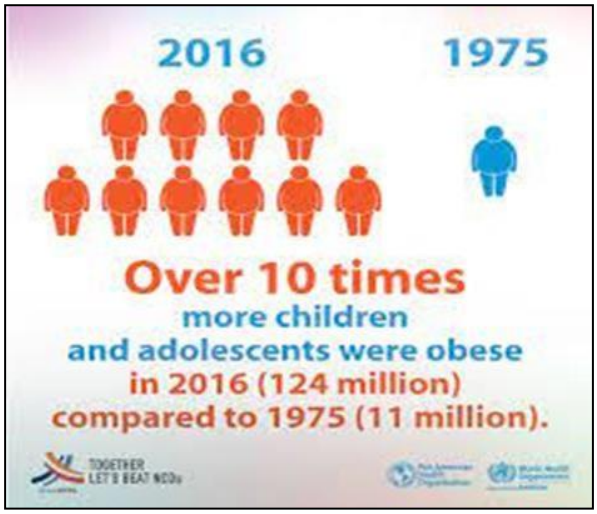


Fig 1: Mean BMI and prevalence (%) of overweight/obesity among women by year, India, 1998-99, 2005- 06, and 2015-16. Source: www.jcdr.net

Causes and Risks in Childhood Obesity

The world is experiencing a rapid epidemiological and nutritional transition characterized by obstinate nutritional deficiencies, as evinced by the prevalence of stunting, anemia, and iron and zinc deficiencies. Concomitantly, there is a progressive rise in the occurrence of obesity, diabetes and other nutrition related chronic diseases (NRCDs) like cardiovascular disease, and some types of cancer. Obesity has touched epidemic levels in developed countries. The highest prevalence rates of childhood obesity have been detected in developed countries; however, its pervasiveness is increasing in developing countries as well. Females are more likely to be obese in comparison to males, owing to intrinsic hormonal differences.

It is evolving convincingly that the genesis of Type 2 Diabetes and Coronary Heart Disease begins in childhood, with childhood obesity serving as a significant factor. There has been a phenomenal upswing in proportions of children having obesity in the last 4 years, particularly in the developed world. Studies emerging from different parts of India within last decade are also revealing similar trend.



Source: www.paho.org/WHO, 2017

Childhood obesity is one of the most solemn public health challenges of the 21st century. The problem is universal and is steadily affecting many low and middle income countries, particularly in urban settings. The prevalence has augmented at an alarming rate globally in 2010, the figure of overweight children under the age of five is assessed to be over 42 million. Close to 35 million of these are existing in developing countries.

It is widely putative that surge in obesity outcomes from an imbalance between energy intake and expenditure, with a rise in positive energy balance being closely linked with the lifestyle adopted and the dietary intake choices. However, there is increasing evidence representing that an individual's genetic background is important in defining obesity risk. Research has made significant contributions to our understanding of the factors associated with obesity. The impact of such risk factors is moderated by factors such as age, and gender. Family also plays an essential role in it. Environmental features including school policies, demographics, and parents‟ work-related demands further influence eating and activity behaviors.

Genetics are one of the major factors examined as a cause of obesity. Some studies have found that BMI is 25-40% transmissible. However, genetic susceptibility often needs to be combined with contributing environmental and behavioral factors in order to affect weight. The genetic factor accounts for less than 5% of cases of childhood obesity. Therefore, while genetics can play a role in the development of obesity, it is not the cause of the intense increase in childhood obesity.

Basal metabolic rate has also been studied as a possible cause of obesity. Basal metabolic rate, or metabolism, is the body's expenditure of energy for normal resting functions. Basal metabolic rate is liable for 60% of total energy expenditure in sedentary adults. It has been hypothesized that obese individuals have lesser basal metabolic rates. However, differences in basal metabolic rates are not likely to be responsible for the escalating rates of obesity.

Several studies investigate factors behind poor diet and offer copious insights into how parental factors may influence on obesity in children. They show that children learn by modeling parents‟ and peers‟ preferences, intake and readiness to try new foods. Availability of, and frequent exposure to, healthy foods is key to developing preferences and can overcome dislike of foods. Meal time structure is important with evidence signifying that families who eat together consume healthier foods. Furthermore, eating out or watching TV while eating is linked with a higher intake of fat. Parental feeding style is also significant. It is found that authoritative feeding (determining which foods are offered, allowing the child to choose, and providing rationale for healthy options) is associated with positive cognitions about healthy foods and healthier intake. Interestingly authoritarian restriction of “junk-food” is associated with increased desire for unhealthy food and higher weight.

Government and social policies could also potentially endorse healthy behavior. Research indicates taste, followed by hunger and price, is the most important factor in adolescent’s snack selections. Other studies determine that adolescents associate junk food with pleasure, independence, and convenience, whereas liking healthy food is considered odd. This suggests investment is required in changing meanings of food, and social perceptions of eating behavior. As proposed by the National Taskforce on Obesity 2005), fiscal policies such as taxing unhealthy options, providing incentives for the distribution of inexpensive healthy food, and investing in convenient recreational facilities or the esthetic quality of neighborhoods can enhance healthy eating and physical activity. Dietary factors have been studied extensively for its possible contributions to the rising rates of obesity. The dietary factors that have been scrutinized include fast food consumption, sugary beverages, snack foods, and portion sizes.

Fast food Consumption: Increased fast food consumption has been linked with obesity in the recent years. Many families, especially those with two parents working outside the home, opt for these places as they are often favored by their children and are both convenient and inexpensive. Foods served at fast food restaurants tend to contain a high number of calories with low nutritional values. A study conducted examined the eating habits of lean and overweight adolescents at fast food restaurants. Researchers found that both groups consumed more calories eating fast food than they would typically in a home setting but the lean group compensated for the higher caloric intake by adjusting their caloric intake before or after the fast food meal in anticipation or compensation for the excess calories consumed during the fast food meal. Though many studies have shown weight gain with regular consumption of fast food, it is difficult to establish a causal relationship between fast food and obesity.

Sugary beverages/ Carbonated Drinks: A study investigative children aged 9-14, found that consumption of sugary beverages elevated BMI by slight amounts over the years. Sugary drinks are another factor that has been examined as a potential contributing factor to obesity. Sweetened drinks are frequently thought of as being limited to soda, but juice and other sweet beverages also comes under this category. There has been data showing the link between sugary/ carbonated drink consumption and weight and it has been incessantly found to be a donating factor to being overweight. Sugary drinks are less satisfying than food and can be gulped ghastly, which results in a higher calorie intake.

Snack foods/ Munchies: One more reason that has been noted as a dominating element contributing to childhood obesity is the high intake of snack foods. Snack foods are also known as munchies which include foods such as baked goods, candies and chips etc.

Portion size: Portion sizes have augmented severely in the past decades. Enjoying large portions, in addition to regular snacking on highly caloric foods, donate to an excessive caloric intake. This energy imbalance can root weight gain, and this will later result in obesity.

Activity level: One of the factors that are most pointedly connected to obesity is a sedentary lifestyle. Prevalence of obesity is augmented by 2% with each additional hour spend on television per day. Television watching among adolescents and young children has increased intensely in recent years. It has been noted that there is a decrease in amount of time utilized in physical activity due to the increased amount of time spent in sedentary behaviors. A correlation is visible in data that shows the number of time children spend watching TV and their feasting of the most advertised foods, including salty snacks, sweetened beverages, sweetened cereals and sweets.

Family factors: Family influences have also been associated

with the hike in the cases of obesity. The foods that are easily accessible in the house and the food predilections of family members can encourage the foods that children relish on. Moreover, family mealtimes can affect the amount and the type of food consumed thereof. In addition, family habits, whether they are sedentary or physically active, has an impact on the child. Data present have revealed that having an overweight mother and living in a single parent household are connected with overweight and obesity in early childhood.

Changes in Lifestyle (Urbanization)

With refining standards of living, and accessibility of food in plenty, the upper class societies of India in current years have urbanized to western levels. The components of life style changes are:

- **Unhealthy eating patterns, wrong choices of food:** Traditional micronutrient rich foods are being substituted by energy dense highly processed micronutrient poor foods with greatly increased portions. High calorie snacks, junk food revolution, cool cola colonization, and food as rewards or demonstration of love are all part of new life styles. All celebrations and festivals seem to be centered on rich foods.
- **Sedentary pursuits:** TV and movie watching, video games, internet gawking and telephone gossip sessions are now important activities of children. TV also affects by heavy marketing of colas and other fatty foods. The number of TV sets and telephone connections are touted as indices of development.
- **"Obesogenic schools" and Tuition classes:** An important factor for obesity in India is the intense competition for admissions to schools and colleges with thriving tuition class right from nursery levels. Children are enforced to use their play time for additional studies. Games or physical training sessions are limited or non-existent in many schools. Some schools do not have any playgrounds at all.
- **Inadequate play areas:** Due to unsafe roads (traffic, crime) children are discouraged form walking or cycling to school. Motorized vehicles are popular and they are supposed to be quicker and safer for transport. Erosion of open spaces for exercise and lack of parental time to administer play are all part of new obesogenic lifestyles. As against food as rewards, ironically exercise is meted out as a punishment - "100 sit ups", "run round the field".

Genetic 'Constitutional' Pre-disposition

The factors responsible could be:

- Modern environment may have unmasked previously silent obesogenic genes "thrifty genotypes".
- Programming of previously malnourished populations to accumulate fat more intensely in an attempt to store for future starvation ("early life origins").
- Stunting in childhood (short height for age) may increase the risk of central obesity especially in transitional economies.
- High rate of gestational diabetes in pregnant women causing higher birth weights in babies leading to intergenerational effects of obesity in childhood and its attendant's problem.
- Familial pattern of eating, exercise and behavior.

Other Factor

Prolonged and exclusive breast feeding is associated with a significantly lower rate of obesity and hypertension in later life. It is not clear if early introduction of energy dense supplements in infancy has contributed to childhood obesity in India.

Conclusion

This study emphasizes the need for a comprehensive classification system that captures the multifaceted nature of obesity in children. This system should take into account variations in body composition, metabolic health, and genetic predispositions, allowing for a more tailored approach to prevention and treatment. Further, various factors have been identified as significant modulators of childhood obesity. These include dietary habits, physical activity levels, socio-economic status, and environmental influences. Addressing these factors through targeted interventions can play a vital role in mitigating the rise of obesity among children. Furthermore, this study underscores the urgent need to address the multiple causes of childhood obesity, as it poses significant long-term health risks, including the development of chronic conditions such as diabetes, cardiovascular disease, and psychological issues. Strategies aimed at reducing obesity prevalence must be multifaceted, involving collaboration among parents, schools, healthcare providers, and policymakers. Overall, proactive measures that consider the complexities of obesity are essential for fostering healthier futures for children and reducing the overall burden of obesity related health issues in society.

References

1. Bouchard C. Physical activity and obesity. Champaign, IL: Human Kinetics; 2000.
2. Gopalan C. Multiple micronutrient supplementation in pregnancy. Nutr Rev. 2002;60:S2-S6.
3. Gupta P, Tyagi S, Mukhija M, *et al*. Obesity: an introduction and evaluation. J Adv Pharm Educ Res. 2011;2:125-137.
4. Hancox RJ, Poulton R. Watching television is associated with childhood obesity: but is it clinically important? Int J Obes. 2006;30(1):171-5.
5. Haslam DW, James WP. Obesity. Lancet. 2005;366:1197-1209.
6. Par JH, Moon JH, Oh YH. Sedentary life: overview of updated evidence of potential health risks. Jeju National University, Korea; 2020.
7. Ramachandran A, Chamukuttan S, Shetty SA, Arun N, Susairaj P. Obesity in Asia—Is it different from the rest of the world? Diabetes Metab Res Rev. 2012;28:47-51.
8. Shah YR, Sen DJ, Patel RN, *et al*. Liposuction: a remedy from obesity. Int J Drug Dev Res. 2011;3(1):14-30.
9. Shetty P. Secular trends in obesity and physical activity: physiological and public health considerations. In: Shetty P, Gopalan C, editors. Diet, nutrition and chronic disease—An Asian perspective. London: Smith Gordon Publishers; 1998. p. 39-40.