

Obesity in Indian Youth

Dr. Renu Durgapal

Associate Professor, Government MS Girls College, Bikaner, Rajasthan, India

ABSTRACT

People in the age group of 24 to 39 years, who have been living in big metros or booming small towns, are at the risk of being obese, a recent study has suggested.

The study puts an alarming 70 per cent of India's urban population in the obese or overweight category. And, at risk is the generation that Facebooks rather than go over to meet friends, bonds over gaming sessions on Playstations or X-boxes rather than play cricket or badminton, the study warns.

The national capital faces the ignominy of being the obesity capital of the country, while Chandigarh shares the top spot with Delhi.

While declining sex ratio has been a concern in the country for years, there is now a new worrying trend emerging in the cities. The number of obese women in urban areas has been on the rise. Every second member of the fairer sex falls into this category.

And, for long, India's young population has been touted as India's USP in the globalised economy. However, it also seems to be hit by the severe problem of obesity. For, it is the 24-39 age group that is the worst affected.

Why urban India? Experts suggest obesity has to do with the lifestyle of the majority of the population in urban India. The urban populace has easy access to high-calorie packaged foods such as burgers, chips and colas.

KEYWORDS: obesity, India, youth, population, students, cardiovascular, diseases, urban

INTRODUCTION

The study which suggested that 70 per cent urban Indians are fat or overweight was conducted on 46,000 people who had internet access. Increase in the sale of cigarettes and alcohol consumption does not help either.

Risks with obesity Piling on the calories without a check could have serious consequences for one's health, especially if the person is classified overweight or obese.

There are more than 30 medical conditions associated with obesity and individuals who are obese can develop multiple ones.

The most prevalent obesity related diseases are diabetes, high blood pressure, high cholesterol, heart disease or cardiovascular problems.[1]

It also heightens risk of a stroke, affects gall bladder and can aid the onset of osteo-arthritis and leads to

respiratory problems or sleeping disorders and even some kinds of cancers.

Children at risk What probably should set the alarm bells ringing is a November 2010 study by the National Diabetes, Obesity and Cholesterol Foundation of India.

It found that one in three children in private schools in Delhi were obese. The reasons though were quite similar to adult obesity, packaged foods and an acute lack of physical activity. Obesity is now emerging as a common nutritional disorder. It usually results when food consumption is more than one's physiological needs [7]. National Nutrition Monitoring Bureau (NNMB) data observed high obesity levels in urban slums indicating that obesity is now affecting the urban poor also. A study conducted in Kerala showed that prevalence was 3 % for boys, 5.3 % for girls. Prevalence of obesity (7.5 %), overweight (21.9 %)

How to cite this paper: Dr. Renu Durgapal "Obesity in Indian Youth" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-3, April 2022, pp.1452-1457, URL: www.ijtsrd.com/papers/ijtsrd49756.pdf



Copyright © 2022 by author (s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



were highest among high-income group and lowest (1.5 % and 2.5 %) among low-income group. in the year 2015, the prevalence of overweight and obesity is increased to 18.7% and 22.7% respectively. It is noted that such studies have not been conducted using all three parameters for the estimation of overweight/obesity. Thus, if only BMI is considered as a parameter for estimation, the prevalence of obesity may be under diagnosed. From the studies, the parameters such as Waist/height ratio and waist circumference are used for estimation of obesity only. overweight /obesity is seen commonly in students

who spend more time in screen viewing such as watching television/mobile phones /computer, and in students who play Indoor games, and in students who don't spend time involved in household activities, and in students who eat non –vegetarian food, and in students who dine out more often, and in students who consume meal frequently, and in students who eat unhealthy snacks (pizza, burger, ice cream, shawarma) and aerated drinks. These were found to be the risk factors predisposing to overweight /obesity.[2]

Observations

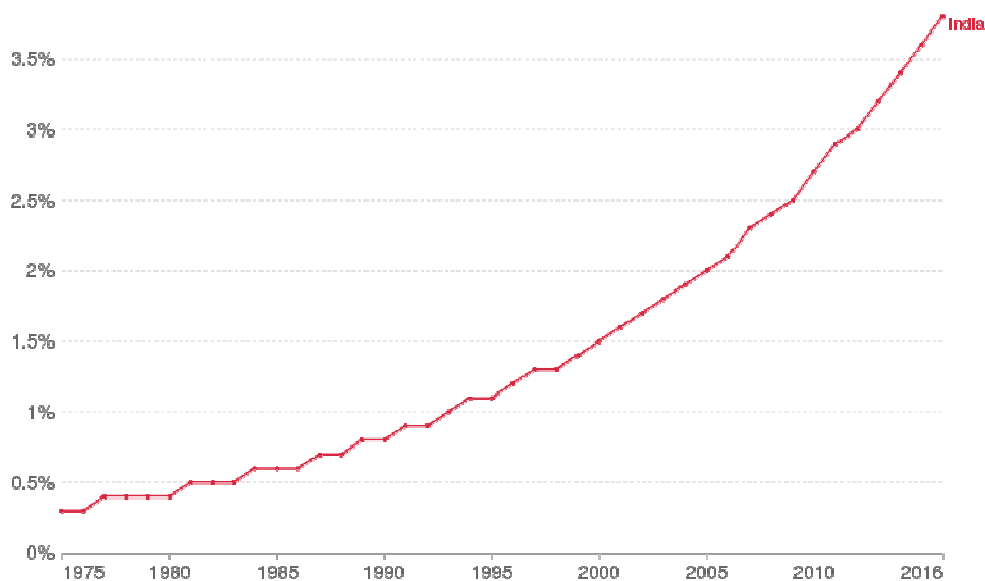
This is a list of the states of India ranked in order of percentage of youth who are overweight or obese, based on data from the 2015-2016 National Family Health Survey.

States	Males (%)	Males rank	Females (%)	Females rank
India	18.9	24	20.7	22
Delhi	24.6	11	33.5	5
Chandigarh	32.0	6	41.4	1
Dadra and Nagar Haveli	22.9	15	19.2	25
Daman and Diu	30.7	7	31.7	9
Andaman and Nicobar Islands	38.2	1	31.8	8
Lakshadweep	24.1	13	40.6	2
Puducherry	37.1	2	36.7	3
Punjab	27.8	10	31.3	10
Kerala	28.5	8	32.4	7
Goa	32.7	5	33.5	4
Tamil Nadu	28.2	9	30.9	11
Andhra Pradesh	33.5	4	33.2	6
Sikkim	34.8	3	26.7	15
Mizoram	20.9	18	21.1	20
Himachal Pradesh	22.0	17	28.7	13
Maharashtra	23.8	14	23.4	18
Gujarat	19.7	23	23.8	17
Haryana	20.0	21	21.0	21
Karnataka	22.1	16	23.3	17
Manipur	19.8	22	26.0	16
Uttarakhand	17.7	25	20.5	23
Arunachal Pradesh	20.6	19	18.8	26
Uttar Pradesh	12.5	33	16.5	27
Jammu and Kashmir	20.5	20	29.1	12
Bihar	12.6	32	11.7	36
Nagaland	13.9	29	16.2	29
Rajasthan	13.2	30	14.1	31
Meghalaya	10.0	37	12.2	34
Odisha	17.3	26	16.5	28
Assam	12.9	31	13.2	33
Chhattisgarh	10.2	36	11.9	35
West Bengal	14.2	28	19.9	24
Madhya Pradesh	10.9	35	13.6	32
Jharkhand	11.1	34	10.3	37
Telangana	24.2	12	28.7	28
Tripura	15.9	27	16.0	30

Share of adults that are obese, 1975 to 2016

Obesity is defined as having a body-mass index (BMI) equal to, or greater than, 30. BMI is a person's weight (in kilograms) divided by their height (in meters) squared.

Our World
in Data



Source: WHO, Global Health Observatory

Discussion

Obesity is a complex health issue resulting from a combination of causes and individual factors such as behavior and genetics. Behaviors can include physical activity, inactivity, dietary patterns, medication use, and other exposures. Additional contributing factors include the food and physical activity environment, education and skills, and food marketing and promotion. Obesity is serious because it is associated with poorer mental health outcomes and reduced quality of life. Obesity is also associated with the leading causes of death in the United States and worldwide, including diabetes, heart disease, stroke, and some types of cancer. Genetic changes in human populations occur too slowly to be responsible for the obesity epidemic. Nevertheless, how people respond to an environment that promotes physical inactivity and intake of high-calorie foods suggests that genes do play a role in developing obesity. Genes give the body instructions for responding to changes in its environment. Variants in several genes may contribute to obesity by increasing hunger and food intake. Rarely, a clear pattern of inherited obesity within a family is caused by a specific variant of a single gene (monogenic obesity). Most obesity, however, probably results from complex interactions among multiple genes and environmental factors that remain poorly understood (multifactorial obesity).[3]

Health care practitioners routinely collect family health history to help identify people at high risk of obesity-related diseases such as diabetes, cardiovascular diseases, and some forms of cancer. Family health history reflects the effects of shared genetics and environment among close relatives. Families cannot change their genes, but they can

encourage healthy eating habits and physical activity. Those changes can improve the health of family members—and improve the health history of the next generation.

Observations

Some illnesses may lead to obesity or weight gain. These may include Cushing's disease, and polycystic ovary syndrome. Drugs such as steroids and some antidepressants may also cause weight gain. Research continues on the role of other factors in energy balance and weight gain such as chemical exposures and the role of the microbiome. A health care provider can help you learn more about your health habits and history to identify whether behaviors, illnesses, medications, and/or psychological factors are contributing to weight gain or making weight loss hard.[4]

People who have obesity, compared to those with a healthy weight, are at increased risk for many serious diseases and health conditions, including the following:

- All-causes of death (mortality)
- High blood pressure (hypertension)
- High LDL cholesterol, low HDL cholesterol, or high levels of triglycerides (Dyslipidemia)
- Type 2 diabetes
- Coronary heart disease
- Stroke
- Gallbladder disease
- Osteoarthritis (a breakdown of cartilage and bone within a joint)
- Sleep apnea and breathing problems
- Low quality of life
- Mental illness such as clinical depression, anxiety, and other mental disorders^{8,9}

- Body pain and difficulty with physical functioning
- Many types of cancers

Implications

Increased education levels were related with increased obesity—university educated individuals tended to be more obese (44.6%) when compared to those with no education (38.4%). Not surprisingly, populations with vigorous physical activity had lower obesity rates (32.56%) than populations that were inactive (43.71%). Men with university education had higher levels of obesity than men who were uneducated (55.2% vs. 38.4%). Similarly, among people over 40 years of age, the university educated subpopulation had 55.2% obesity while the uneducated subpopulation had 38.4% obesity. Our results have shown that obesity is a highly prevalent condition across the country, with 40.32% of the estimated weighted prevalence among adults 18 to 80 years of age. Southern India (46.51%) shows the highest prevalence, while eastern India shows the lowest (32.96%). Among other regions, north, west, and northwest are all well above the national average, showing a respective prevalence of 45.33%, 44.27%, and 43.3%; while northeast and central regions are well below the national average, with a respective prevalence of 37.73% and 36.58%. Our results show that the urban population is markedly more obese than the rural population—44.17% vs. 36.08%. These findings are just as true at the zonal level as they are at the national level. In fact, our results show that even in zones where obesity is markedly less than the national average, the urban population exhibits a high prevalence of obesity. For example, the eastern zone whose overall prevalence is 32.96% has an urban prevalence of 39.43%, which is very close to the national average. [5]

This provides public health authorities many opportunities for evolving effective policies, for instance through adult education, early intervention in urban schools, etc. The importance of both non-modifiable (age and gender) and modifiable (education levels and physical activity levels) factors for determining obesity. The population above 40 years of age are more obese (45.81%) while those under 40 years are less so (34.58%). In addition to age, gender is another determinant of obesity, with women showing a higher prevalence (41.88%) as compared to men (38.67%).[6]

Results

The high prevalence of obesity found by this study makes the observation by the WHO that “obesity is one of the most neglected public health problems” even more applicable to India. The cost of this rapid

epidemiological transition is not limited to the comorbidities of type 2 diabetes and cardiovascular disease. Given the new evidence indicative of a three-fold increase in the risk of developing AD (Alzheimer’s disease) among obese populations without type 2 diabetes, and a potential modeling of AD itself as a brain-specific form of diabetes—the so-called type 3 diabetes, this represents a potentially large neurological dimension to the malady of obesity. Given the high cost of obesity in terms of type 2 diabetes, cardiovascular diseases, and AD, urgent public health measures are necessary to reduce its impact.[7]

Reducing calories and practicing healthier eating habits are vital to overcoming obesity. Although you may lose weight quickly at first, steady weight loss over the long term is considered the safest way to lose weight and the best way to keep it off permanently. There is no best weight-loss diet. Choose one that includes healthy foods that you feel will work for you. Dietary changes to treat obesity include:

- **Cutting calories.** The key to weight loss is reducing how many calories you take in. The first step is to review your typical eating and drinking habits to see how many calories you normally consume and where you can cut back. You and your doctor can decide how many calories you need to take in each day to lose weight, but a typical amount is 1,200 to 1,500 calories for women and 1,500 to 1,800 for men.
- **Feeling full on less.** Some foods — such as desserts, candies, fats and processed foods — contain a lot of calories for a small portion. In contrast, fruits and vegetables provide a larger portion size with fewer calories. By eating larger portions of foods that have fewer calories, you reduce hunger pangs, take in fewer calories and feel better about your meal, which contributes to how satisfied you feel overall.
- **Making healthier choices.** To make your overall diet healthier, eat more plant-based foods, such as fruits, vegetables and whole grains. Also emphasize lean sources of protein — such as beans, lentils and soy — and lean meats. If you like fish, try to include fish twice a week. Limit salt and added sugar. Eat small amounts of fats, and make sure they come from heart-healthy sources, such as olive, canola and nut oils.
- **Restricting certain foods.** Certain diets limit the amount of a particular food group, such as high-carbohydrate or full-fat foods. Ask your doctor which diet plans are effective and which might be helpful for you. Drinking sugar-sweetened

beverages is a sure way to consume more calories than you intended. Limiting these drinks or eliminating them altogether is a good place to start cutting calories.

- **Meal replacements.** These plans suggest replacing one or two meals with their products — such as low-calorie shakes or meal bars — and eat healthy snacks and a healthy, balanced third meal that's low in fat and calories. In the short term, this type of diet can help you lose weight. But these diets likely won't teach you how to change your overall lifestyle. So you may have to stay on the diet if you want to keep your weight off.[8]

Be wary of quick fixes. You may be tempted by fad diets that promise fast and easy weight loss. The reality, however, is that there are no magic foods or quick fixes. Fad diets may help in the short term, but the long-term results don't appear to be any better than other diets. Similarly, you may lose weight on a crash diet, but you're likely to regain it when you stop the diet. To lose weight — and keep it off — you must adopt healthy-eating habits that you can maintain over time.

Exercise and activity

Increased physical activity or exercise is an essential part of obesity treatment:

- **Exercise.** People with obesity need to get at least 150 minutes a week of moderate-intensity physical activity to prevent further weight gain or to maintain the loss of a modest amount of weight. You probably will need to gradually increase the amount you exercise as your endurance and fitness improve.
- **Keep moving.** Even though regular aerobic exercise is the most efficient way to burn calories and shed excess weight, any extra movement helps burn calories. Park farther from store entrances and take the stairs instead of the elevator. A pedometer can track how many steps you take over the course of a day. Many people try to reach 10,000 steps every day. Gradually increase the number of steps you take daily to reach that goal.

Behavior changes

A behavior modification program can help you make lifestyle changes and lose weight and keep it off. Steps to take include examining your current habits to find out what factors, stresses or situations may have contributed to your obesity.

- **Counseling.** Talking with a mental health professional can help address emotional and behavioral issues related to eating. Therapy can help you understand why you overeat and learn

healthy ways to cope with anxiety. You can also learn how to monitor your diet and activity, understand eating triggers, and cope with food cravings. Counseling can be one-on-one or in a group.

- **Support groups.** You can find camaraderie and understanding in support groups where others share similar challenges with obesity. Check with your doctor, local hospitals or commercial weight-loss programs for support groups in your area.[9]

Weight-loss medication

Weight-loss medications are meant to be used along with diet, exercise and behavior changes, not instead of them. Before selecting a medication for you, your doctor will consider your health history, as well as possible side effects. The most commonly used medications approved by the U.S. Food and Drug Administration (FDA) for the treatment of obesity include:

- Bupropion-naltrexone (Contrave)
- Liraglutide (Saxenda)
- Orlistat (Alli, Xenical)
- Phentermine-topiramate (Qsymia)

Weight-loss medications may not work for everyone, and the effects may wane over time. When you stop taking a weight-loss medication, you may regain much or all of the weight you lost.

Endoscopic procedures for weight loss

These types of procedures don't require any incisions in the skin. After you are under anesthesia, flexible tubes and tools are inserted through the mouth and down the throat into the stomach. Common procedures include:

- **Endoscopic sleeve gastropasty.** This procedure involves placing stitches in the stomach to reduce the amount of food and liquid the stomach can hold at one time. Over time, eating and drinking less helps the typical person lose weight.
- **Intragastric balloon for weight loss.** In this procedure, doctors place a small balloon into the stomach. The balloon is then filled with water to reduce the amount of space in the stomach, so you'll feel full eating less food.

Weight-loss surgery

Also known as bariatric surgery, weight-loss surgery limits the amount of food you're able to comfortably eat or decreases the absorption of food and calories. However, this can also result in nutritional and vitamin deficiencies. Common weight-loss surgeries include:

- **Adjustable gastric banding.** In this procedure, an inflatable band separates the stomach into two

pouches. The surgeon pulls the band tight, like a belt, to create a tiny channel between the two pouches. The band keeps the opening from expanding and is generally designed to stay in place permanently.

- **Gastric bypass surgery.** In gastric bypass (Roux-en-Y), the surgeon creates a small pouch at the top of the stomach. The small intestine is then cut a short distance below the main stomach and connected to the new pouch. Food and liquid flow directly from the pouch into this part of the intestine, bypassing most of the stomach.
- **Gastric sleeve.** In this procedure, part of the stomach is removed, creating a smaller reservoir for food. It's a less complicated surgery than gastric bypass.

Weight-loss success after surgery depends on your commitment to making lifelong changes in your eating and exercise habits.[10]

Other treatments

Other treatments for obesity include:

- **Hydrogels.** Available by prescription, these edible capsules contain tiny particles that absorb water and enlarge in the stomach, to help you feel full. The capsules are taken before meals and are passed through the intestines as stool.
- **Vagal nerve blockade.** This involves implanting a device under the skin of the abdomen that sends intermittent electrical pulses to the abdominal vagus nerve, which tells the brain when the stomach feels empty or full.
- **Gastric aspirate.** In this procedure, a tube is placed through the abdomen into the stomach. A portion of the stomach contents are drained out after each meal.

Conclusion

At present, while the Covid-19 wreaked havoc directly, it also had adverse effects indirectly. The lethargic lifestyle and back-to-back lockdowns forced people to stay at home without much exercise. Recently, the World Health Organization had estimated that worldwide obesity has nearly tripled since 1975. Talking about India, 135 million youth are obese, as per the Indian Journal of Community Medicine. For severe obesity, Bariatric surgery is an effective treatment that results in the improvement or remission of many obesity-related comorbid conditions, as well as sustained weight loss and improvement in quality of life. The four most common bariatric operations performed worldwide are laparoscopic sleeve gastrectomy, laparoscopic Roux-en-Y gastric bypass, laparoscopic adjustable gastric banding and duodenal switch. Bariatric

surgery is now safe, with mortality comparable to common elective general surgical operations.[10]

References

- [1] "India facing obesity epidemic: experts". The Hindu. 2007-10-12.
- [2] Gulati, S; Misra, A (2017). "Abdominal obesity and type 2 diabetes in Asian Indians: Dietary strategies including edible oils, cooking practices and sugar intake". *European Journal of Clinical Nutrition*. 71 (7): 850–857. doi:10.1038/ejcn.2017.92. PMID 28612831. S2CID 23766777.
- [3] Indian Heart Association Webpage 26 April 2015. <<http://indianheartassociation.org/>>
- [4] Chambers, John C; Elliott, Paul; Zabaneh, Delilah; Zhang, Weihua; Li, Yun; Froguel, Philippe; Balding, David; Scott, James; Kooner, Jaspal S (2008). "Common genetic variation near MC4R is associated with waist circumference and insulin resistance". *Nature Genetics*. 40 (6): 716–8. doi:10.1038/ng.156. PMID 18454146. S2CID 12331736.
- [5] Misra, A; Chowbey, P; Makkar, B. M; Vikram, N. K; Wasir, J. S; Chadha, D; Joshi, S. R; Sadikot, S; Gupta, R; Gulati, S; Munjal, Y. P (2009). "Consensus statement for diagnosis of obesity, abdominal obesity and the metabolic syndrome for Asian Indians and recommendations for physical activity, medical and surgical management". *The Journal of the Association of Physicians of India*. 57: 163–70. PMID 19582986.
- [6] "National Family Health Survey (NFHS-4), 2015-2016" (PDF). Mumbai: International Institute for Population Sciences. 2017.
- [7] Praween Kumar Agrawal (2002-05-23). "Emerging Obesity in Northern Indian States: A Serious threat for Health" (PDF). IUSSP Conference, Bankik, June 10–12 2002.
- [8] Yajnik, C. S (2007). "Obesity epidemic in India: Intrauterine origins?". *Proceedings of the Nutrition Society*. 63 (3): 387–96. doi:10.1079/PNS2004365. PMID 15373948.
- [9] Misra, A (2002). "Erratum: High prevalence of diabetes, obesity and dyslipidemia in urban slum population of northern India". *International Journal of Obesity*. 26 (9): 1281. doi:10.1038/sj.ijo.0802030.
- [10] Yoon, Kun-Ho; Lee, Jin-Hee; Kim, Ji-Won; Cho, Jae Hyoung; Choi, Yoon-Hee; Ko, Seung-Hyun; Zimmet, Paul; Son, Ho-Young (2006). "Epidemic obesity and type 2 diabetes in Asia". *The Lancet*. 368 (9548): 1681–8.