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## Obesity and Indian Adult: A review study

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### Abstract

*BMI is a ratio of weight in kilograms divided via height in metres squared (Kg/m<sup>2</sup>). It is good a predictor for usual fitness and nutritional status of a grownup. In India more than 160 million people had been suffering from weight problems. More than 2 billion adults are obese and 670 million overweight. More than 2 billion adults are obese and 670 million are overweight. The winning take-a-look at represents the superiority of stylish weight problems in India at the idea of studies reported for the duration of final 20 years, consistent with a report by way of the Indian Institute of Public fitness studies (IPHR) There can be no collective facts of incidence of weight problems in India. The prevalence of obesity has increased significantly between 2002 and 2022. Urban populations, states with high socioeconomic levels, and South India all have greater obesity prevalence rates. Obesity causes a number of medical issues, many of which have a direct connection to cardiovascular disease (CVDs).*

**KEYWORDS:** BMI, Obesity

### INTRODUCTION

Body mass index (BMI) is a ratio of weight in kilograms divided via height in metres squared (Kg/m<sup>2</sup>). It is good a predictor for usual fitness and nutritional status of a grownup. More than 2 billion adults are obese and 670 million are overweight. Approximately 2.9 million deaths are stated because of obese or overweight. Obese and obesity have become a major public health and wellbeing problem in both developing and advanced countries. In India, as a growing country which is in a transitional kingdom of below nutrition due to poverty and obesity due to the industrialization, speedy urbanization and system dependency. In India, more than 160 million people had been suffering from weight problems. Being overweight and obese leads to a significant decline in physical performance and other activities of daily living among the elderly (Hergenroeder et al, 2011). Previously, distinctive research were pronounced which after the use of special methodologies and cut off factors for defining obesity that created complications in assessment. Presently there may be no collective statistics of prevalence of obesity in India. So, that the prevailing take a look

at represents the superiority of fashionable weight problems in India on the idea of studies reported at some stage in final 20 years.

## METHODOLOGY

### Search approach:

Only articles posted in English had been blanketed inside the literature search that was done inside the electronic databases (Google student and Pub Med). Further to "Body mass index," "underweight," "weight problems," and "India," the hunt terms additionally covered "hazard factors," "outcomes," "prevention," and "cures." sixty five references had been produced due to this manner, along with government publications, reviews from national and worldwide companies, evaluation articles, and research.

### Criteria for screening obesity: a) WHO criteria for screening obesity for Asian population, World Health Organization. (2011). -

Men WC = 85 cm; WHR = 0.90; and Women WC = 80 cm; WHR = 0.80 BMI (Kg/m<sup>2</sup>): Underweight < 18.5; Normal = 18.5-22.9; Overweight = 23.0-24.9; Obesity I = 25.0-29.9; Obesity II = 30.0.

### NHLBI Obesity Education Initiative, National Institutes of Health, (2000).-

BMI (Kg/ m<sup>2</sup>): Underweight < 18.5; Normal = 18.5-24.9; Overweight = 25-29.9; Obesity I = 30-34.9; Obesity II = 35-39.9; Extreme obesity III 40

**Table 1**

**Represents the prevalence of obesity in India (2002-2022)**

Author	Year of Study Reported	State	Age	Prevalence Of Obesity (%)	
				Male	Female
Shukla et al]	2002	Mharastra	≥35	19	30
Yajnik	2002	Pune, Maharashtra	>40	1.8	9.8
Sidhu & Kaur	2005	Punjab	20 -45	Urban: 43.88 Rural: 22.26	
Das M & Bose K	2006	West Bengal (Marwaris)	>20	44.5	71.8
NCD risk factor surveillance 2003-2005	2008	North India-(Delhi)	15 -64	23.8	N.A
		Ballabgarh- (Haryana)		27.2	
		South India-Chennai, Tamil Nadu Trivandrum (Kerala)		15.9	
		East India -Dibrugarh (Assam)		15	
Mungreiphy et al.	2011	Tangkhul Naga	20 -70	17.6	N.A
ICMR-INDIAB (Urban & Rural)	2015	Tamil Nadu	≥20	20.6	28.4
		Maharashtra		15.7	17.6
		Jharkhand		11.5	12.1
		Chandigarh		24.2	38.7
Kandpal et al	2016	Uttarakhand	20 -60	54.8	57.6
Mishra et al.	2018	Rajasthan	25 -65	Rural: 20.78 Urban:37.5	

Table 2.

## Nutritional Status of Adults (age 15-49 years)

Sl.No.	Indicators	NFHS-5 (2019-21)			NFHS-4 (2015-16)			NFHS-3(2005)		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
1	Women whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m <sup>2</sup> )%	13.2	21.2	18.7	15.5	26.7	22.9	19.8	38.8	33
2	Men whose Body Mass Index (BMI) is below normal (BMI <18.5 kg/m <sup>2</sup> )%	13	17.8	16.2	15.4	23.0	20.2	17.5	33.1	28.1
3	Women who are overweight or obese (BMI ≥25.0 kg/m <sup>2</sup> )(%)	33.2	19.7	24.0	31.3	15.0	20.6	28.9	8.6	14.8
4	Men who are overweight or obese BMI ≥25.0 kg/m <sup>2</sup> (%)	29.8	19.3	22.9	26.6	14.3	18.9	22.2	7.3	12.1
5	Women who have high risk waist-to-hip ratio (≥0.85) (%)	59.9	55.2	56.7						
6	Men who have high risk waist-to-hip ratio (≥0.90) (%)	50.1	46.4	47.7						

## RESULTS

Major national survey i.e. national family health survey-3,4,5 (NFHS-3,4,5) reported that socioeconomically backward states (i.e. Jharkhand, Bihar, Madhya Pradesh and Chhattisgarh) having low rate of prevalence of obesity as compared to higher socioeconomic states (i.e. Punjab (Chandigarh), Goa, Delhi, Andhra Pradesh, Telangana, Puducherry and North east states), also, the rate of prevalence of obesity had increased massively (table 2). There are revealed that the urban population were at higher risk of obesity as compared to rural population, (Mishra et al. 2018). NHFS-4 (2015-16) reported around 50% obesity in male which has been increased then NHFS-3(2005-06). Studied among rural and urban populations of four major states (i.e. Chandigarh, Maharashtra, Tamil Nadu and Jharkhand) and reported high obesity rate in Chandigarh and lowest in Jharkhand (Pradeepa, R. et al. 2015). There is high prevalence of obesity more than 40% among Marwari community which is a socioeconomically well-established community (Das, M., & Bose, K. 2006). NCD risk factor surveillance reported that the obesity in South India were higher (i.e. 27.2%) followed by North India (i.e. 23.8%) and lowest in West India (i.e. 15%)(Mohan, V. et al. 2008). The occurrence of obesity is also elevated greater than three instances. There is enough proof of literature which indicated that women were top victim of obesity compared to men. In past 20 years obesity had increased very rapidly in India (table 1).

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## DISCUSSION

In India, the prevalence of weight problems varies from rural to urban regions in addition to by country, that is as a result of a number of reasons. Geographical area, life-style, and consuming conduct are the important thing determinants of obesity. As an instance, sedentary existence and high calorie diets are the primary causes of higher frequency weight problems (i.e., more than 30% in both sexes) most of the populace in excessive socioeconomic states (like Chandigarh and Goa), compared to decrease socioeconomic states (like Jharkhand, Chhattisgarh, Madhya Pradesh, and Bihar) (NFHS-3,4,5). Humans in South India (Andhra Pradesh, Kerala, and Pondicherry), as compared to different states, have a greater occurrence of obesity (extra than 25%). In one of the recent studies reported high prevalence of obesity (i.e. 37.5%) due to urbanization of Bhil and their sedentary life style and dietary pattern as compared to rural Bhil population (i.e. 20.78%)( Mishra D, et al. 2018).

Pros: Its compile the last twenty years research studies (i.e. 2002to 2022) of prevalence of obesity in India. India is home to many distinctive ethnic cultures. These are vary in phrases of geography, life-style, nutritional habits, and culture. But, previous published research employed a western and Asian cut off for the class of weight problems that is unethical and unscientific.

## CONCLUSION

Urban populations, states with high socioeconomic levels, and South India all have greater obesity prevalence rates. Due to a sedentary lifestyle and a diet high in calories, the prevalence of obesity has increased significantly between 2002 and 2022 Obesity causes a number of medical issues, many of which have a direct connection to cardiovascular disease (CVDs). Consequently, it is now time to concentrate on the issue and initiate the necessary steps to solve it.

## SUGGESTIONS

The authors endorse that there's a to have cut-offs for obesity in our country And there ought to be public attention applications regarding obesity and its consequences. Health corporations should promote the healthy nutritional behavior and active life. They need to also teach people about the awful impact of excessive energy food i.e. fast food on our health and fitness.

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