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NATIONAL WHITE PAPER

OBESITY CARE IN INDIA

WORLD OBESITY DAY 2025

Obesity Care in India
National White Paper

First Edition
March 2025

Suggested citation:
Lahariya C (2025). Obesity Care in India: National White paper. Foundation for People-centric Health Systems, New Delhi. Pp 1-48. Licence: CC BY-NC-SA 3.0 IGO.

"This work has been supported by Eli Lilly and Company (India). Lilly was not involved in the creation of this content and the views expressed are participants own independent views."

Published by
Foundation for People-centric Health Systems
B-2/105, Safdarjung Enclave
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Content

Foreword

The alarming rate at which obesity is rising in India necessitates urgent attention. As per the latest National Family Health Survey (NFHS-5, 2019–21), 24% of women and 22.9% of men now grapple with obesity—a near doubling of prevalence since NFHS-3 (2005–06). Equally alarming is the rise among children: 3.4% of under-fives are now obese, a 126% surge from 1.5% in 2005–06. These figures are not mere statistics but a stark warning of a deepening public health emergency. Compounded economic impact of obesity in India in 2019 was $28.9 billion (INR 2.4 lakh crore), equivalent to INR 1,800) per capita and nearly 1.0% of nation's GDP, in healthcare costs and lost productivity. Over weight and obesity is driven by multiple factors such as urbanization, sedentary lifestyles, and changing dietary patterns. The time for action is now; inaction will have grave consequences, placing an increased burden on our health systems and hindering the nation's economic development.

This white paper, "Obesity Care in India", provides a timely and essential analysis of the current situation. Developed in consultation with leading experts in the field, it offers evidence-based recommendations to guide policy and interventions, proposing realistic solutions to this complex challenge.

Recognizing that obesity is not merely a medical problem but one with roots in the diverse social, cultural, and economic dimensions of human life, this paper advocates for solutions that address these multifaceted aspects. It calls for inter-sectoral collaboration, encompassing policy reforms and public awareness campaigns to highlight the harmful effects of obesity and promote effective strategies for mitigating its consequences.

The white paper intends to serves as a vital resource and a call to action for all stakeholders. If the recommendations outlined in this paper are earnestly implemented, with regular monitoring and evaluation, India can become a global leader in effectively addressing the challenge of obesity.

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Foreword

There is an urgency in India. The challenge is of both undernutrition and overnutrition. One of the challenges is of rising Obesity, which is not only a lifestyle problem but a complex, chronic disease that is impacting millions of Indians. We now know the common soil hypothesis and obesity is cause and risk factor for diabetes as well. The dual pandemic of diabesity is going on in India.

Its sudden rise, mainly due to urbanization, sedentary lifestyles, change in dietary patterns, poses significant health challenges and economic burden on the country. Obesity is now widely recognized globally and within the nation as a public health problem and therefore demands urgent, coordinated action. This white paper "Obesity care in India", is a right step at the right time, as it highlights the challenges associated with obesity and a call to action for all stakeholders. It emphasizes the need to reframe obesity as a disease therefore requiring integrated medical care, public health interventions, and policy reforms. This paper presents evidence-based insights from leading experts in public health, nutrition, and clinical care, offering actionable recommendations to address this surging epidemic.

The value of this work is realized in its holistic approach, that addresses not only clinical management of obesity, but its social, economic and cultural aspects. By advocating for policy changes, public awareness campaigns, and the integration of obesity care into primary healthcare systems, this white paper sets the stage for transformative action.

I congratulate the Foundation for People-centric Health Systems (FPHS) for this timely initiative and leadership in bringing this critical issue to the forefront. I am confident that this white paper will serve as a catalyst for meaningful change, paving the way for a healthier, more resilient India.

As a clinician, I attend many patients daily. Obesity is big, economic, financial, emotional and health challenge. It is time to acknowledge obesity as a disease and to treat it with the urgency and empathy it deserves. I urge policymakers, healthcare providers, and communities to join hands in implementing the recommendations put forward in this paper to combat obesity and its far-reaching consequences.

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Former President, Research Society for Study on Diabetes in India

Executive Summary

Why Obesity Care Needs Attention?

- **Rising burden:** Obesity has been recognised as a disease and its burden is rising in all populations and most populations subgroups.
- **Public Health issue:** Obesity is a growing concern in India, reflecting global trends of rising prevalence across all demographics.
- **Health Risk for other conditions:** Obesity increases the risk of type 2 diabetes, cardiovascular diseases, and certain cancers.
- **Unique Genetic Predispositions of India:** The "thin-fat Indian" phenotype heightens susceptibility to complications at lower BMI thresholds.
- **Socioeconomic Impact:** Annual financial burden on the Indian economy estimated at US $28.95 billion in year 2019 due to rising healthcare costs and reduced workforce productivity.

Current Burden and Epidemiology of Obesity in India

- **Rising Prevalence:** Urban prevalence range from 13-50%, rural rates between 08-38%.
- **Affected Demographics:** Higher prevalence among women, urban residents, and individuals from higher socioeconomic strata.
- **Contributing Factors:** Rapid urbanization, lifestyle transitions air pollution
- **Healthcare Gaps:** Early diagnosis and treatment are hindered by insufficient healthcare integration and limited awareness.

Existing Challenges

- **Systemic Hurdles:** Multiple healthcare priorities overshadow obesity care, leaving it under-resourced.
- **Cultural Barriers:** Stigma and blurred perceptions of obesity prevent early intervention.
- **Inadequate Protocols:** Lack of standardized obesity care guidelines and insufficient healthcare professional training.

Prevention of Obesity Through Public Health Interventions

- **Key National Programs:** Ayushman Bharat Program, Fit India Movement, Eat Right India, and Rashtriya Kishor Swasthya Karyakram (RKSK) have towns on welleness.
- **Focus Areas:** Urban planning, school-based programs, and leveraging digital tools for awareness and behavioural change.
- **Community Engagement:** Encouraging healthy lifestyle habits through targeted interventions and policy measures.

Economic Burden

- **Healthcare Costs:** Obesity contributes significantly to escalating healthcare expenses.
- **Impact on Workforce Productivity:** Reduced efficiency and increased absenteeism due to obesity-related health conditions.
- **Potential Escalation:** Without effective interventions, the economic burden is .... to increase further.

Treatment Options: Available and Emerging

- **Anti-obesity Medicine in India:** Until recently, pharmacological options for obesity management in India were limited. However, the availability of **GLP-1 receptor agonists,** such as **Semaglutide,** and the introduction of newer therapies, including **dual GLP-1 & GIP receptor agonists** like **Tirzepatide,** which has received market authorization as an anti-obesity medication, have significantly expanded the treatment landscape.

Emerging Therapies:

- Development of triple agonists targeting GLP-1 and GIP receptors is in progress.
- Hormone-regulating treatments targeting leptin and ghrelin.

- **Bariatric Surgery:** Growing adoption but limited to a fraction of the population due to high costs and limited health insurance coverage.

What Stakeholder Can Do

- **Government:** Develop robust obesity-specific policy frameworks and integrate care into primary healthcare services.
- **Healthcare Providers:** Train professionals to deliver standardized obesity care and promote capacity-building programs.
- **Community Organizations:** Enhance public awareness campaigns and advocate for healthier lifestyle choices.
- **Private Sector:** Collaborate on creating affordable therapeutic and technological solutions for obesity care.

The Way Forward

- **Simplification of obesity care protocol:** A simplified obesity care protocol which should be used to train primary care physicians in identification of obesity and referral to speciality providers.
- **Need to raise awareness in general public about rising burden and impact of obesity**
- **Primary Healthcare Integration:** Incorporate obesity management into primary care services with a focus on preventive measures.
- **New Therapies:** Expedite the approval and availability of emerging treatments.
- **Public Awareness:** Launch culturally sensitive campaigns to reduce stigma and encourage healthier behaviours.
- **SMART Goals:** Use evidence-based treatment objectives to achieve sustainable outcomes.
- **Intersectoral Collaboration:** Foster partnerships between government, private sector, and NGOs for comprehensive obesity management.
- **Technology Utilization:** Leverage digital tools for monitoring, education, and interventions.
- **Policy Frameworks:** Develop evidence-based policies informed by global best practices while addressing India's unique needs.

Graphical Overview

Epidemiology of Obesity in India

- **Growing Prevalence:** Obesity rates in urban areas range from 13% to 50%, and in rural areas from 08% to 38%. [1]
- **Higher Rates in Women:** Women are more likely to be obese than men due to cultural and lifestyle factors. [1]
- **Regional Differences:** Northern, western, southern, and northeastern states have higher obesity rates compared to central and eastern regions.[1]
- **Rising Childhood Obesity:** The number of overweight children increased from 2.1% to 3.4% between recent national surveys (NFHS-4 to NFHS-5). [2]
- **Increasing Adult Obesity:** Among adults aged 18–69, male obesity rose from 18.9% to 22.9%, and female obesity from 20.6% to 24% over the same period. [2]
- **Unique Body Type Risk:** The "thin-fat Indian" body type means even people with normal BMI may have high body fat and related health risks. [3]
- **Sarcopenic Obesity in Older Adults:** Many older adults experience obesity combined with muscle loss, leading to serious health issues. [1]
- **Economic Costs:** Obesity costs India $23.2 billion annually due to healthcare expenses and lost productivity. [4]
- **Global Impact:** India ranks third globally for projected obesity-related economic losses, after China and the United States. [4]
- **Key Contributors:** Urbanization, unhealthy diets, sedentary habits, and reduced physical activity are driving obesity rates higher. [1]

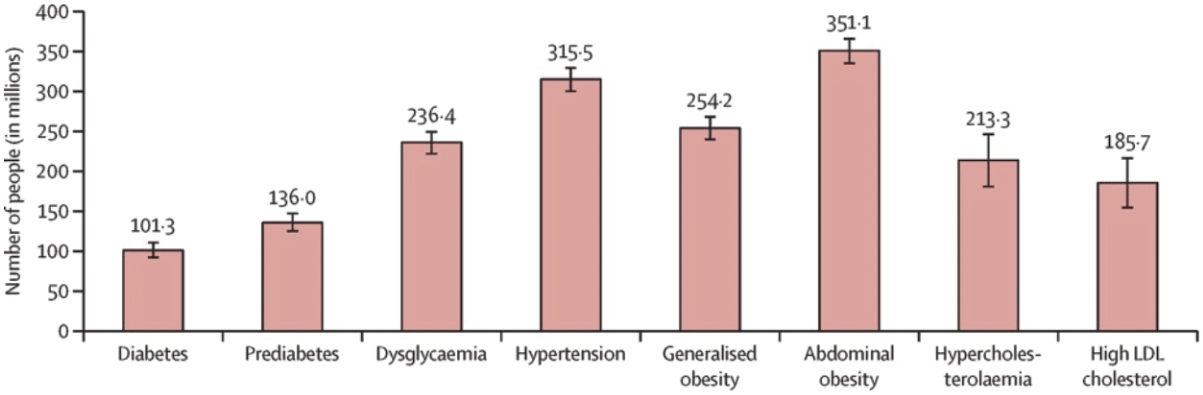

Figure 1. Burden of metabolic conditions in India

Source: *Anjana RM, 2023*

Figure 1 highlights the burden of generalised and abdominal obesity amongst adult population in India, viz a viz other metabolic conditions.

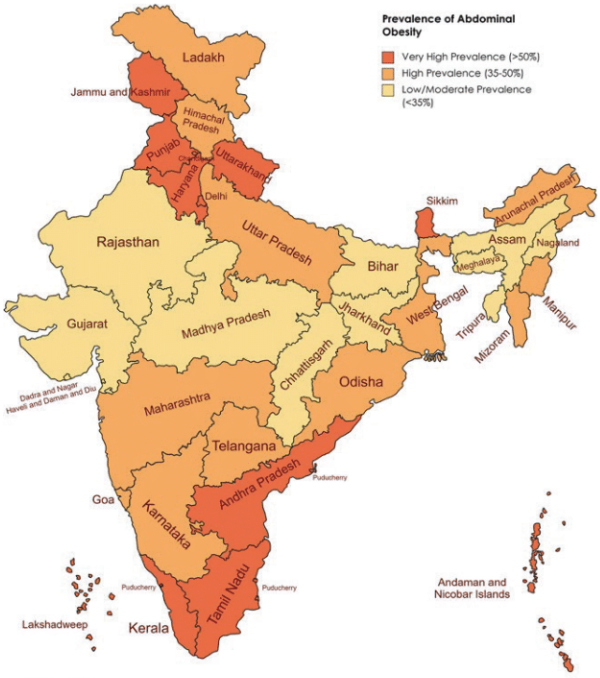

Figure 2. Prevalence of abdominal obesity (waist circumference more than 80 cm) in women of age 15–49 years in Indian states. (NFHS-5)

Source: *Chaudhary & Sharma, 2023)*

Figure 2 is a map of India illustrating the prevalence of abdominal obesity, categorized into three levels: low/moderate prevalence (<35%) in light yellow, high prevalence (35–50%) in orange, and very high prevalence (>50%) in red. The majority of states, including Rajasthan, Gujarat, Madhya Pradesh, and most northeastern states, are shaded in yellow, reflecting low to moderate prevalence. The map visually highlights the regional disparities in abdominal obesity across India, with southern and some northern regions experiencing higher rates. [2]

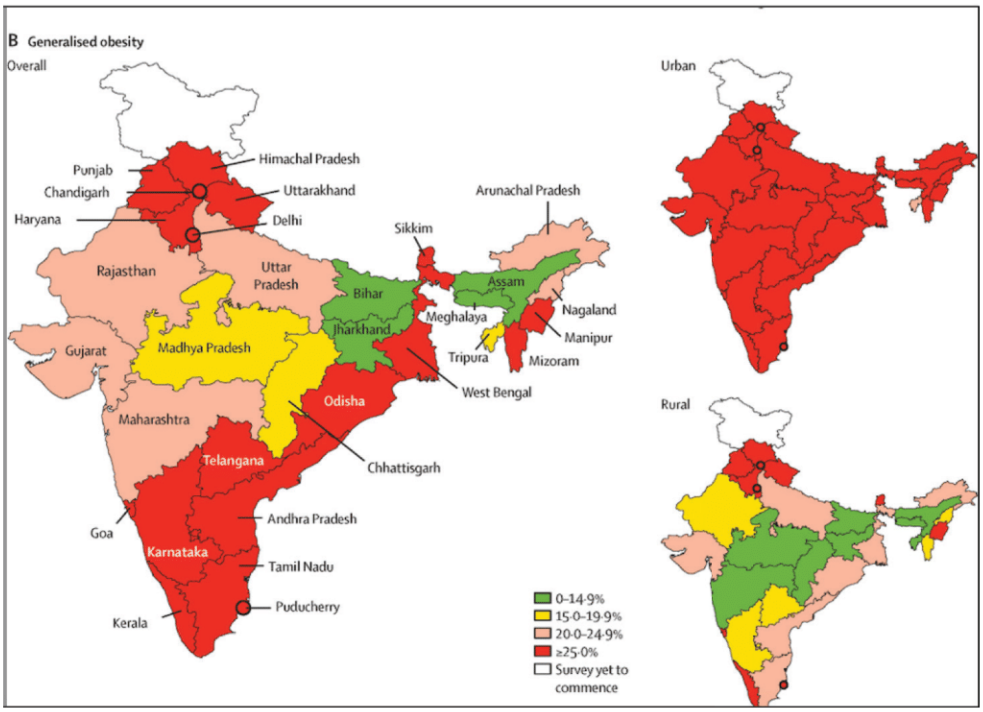

Figure 3. Burden of generalised obesity in Indian states

Source: *Anjana RM et al, 2023*

Figure 3 illustrates the challenge of generalised obesity in Indian states. The North India and southern Indian states have highest prevalence of obesity [5]. Most urban areas across the country have relatively higher prevalence but the prevalence in rural areas is also rising.

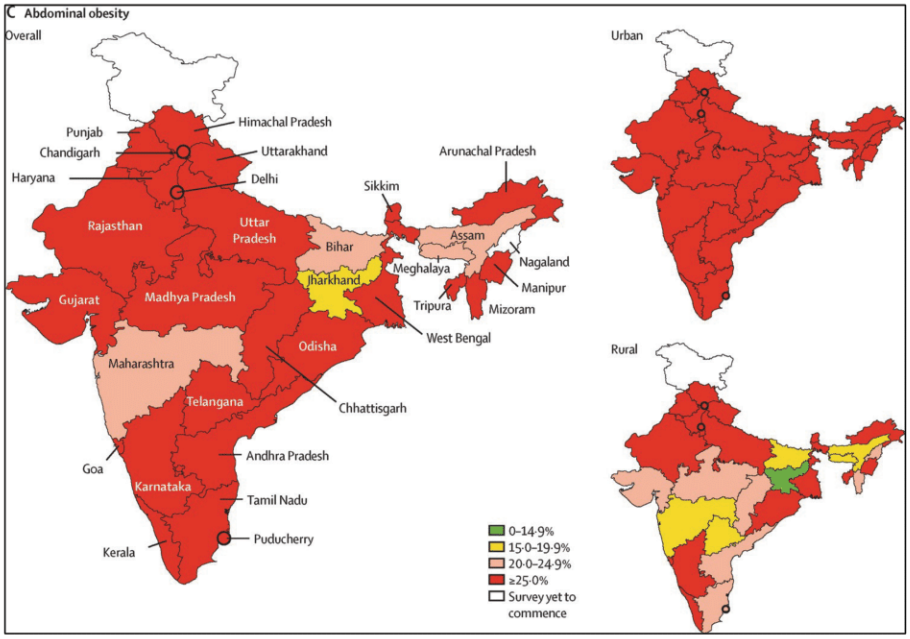

Figure 4. Burden of abdominal obesity in Indian states
Source: *Anjana RM et al, 2023*

The prevalence of abdominal obesity is even higher (than generalised obesity) across Indian states barring a few. This is an area where the rural areas in many states are competing with urban areas as far as obesity is concerned. The figures and graphs above clearly indicate the current situation in obesity in Indian states and status of things to come.

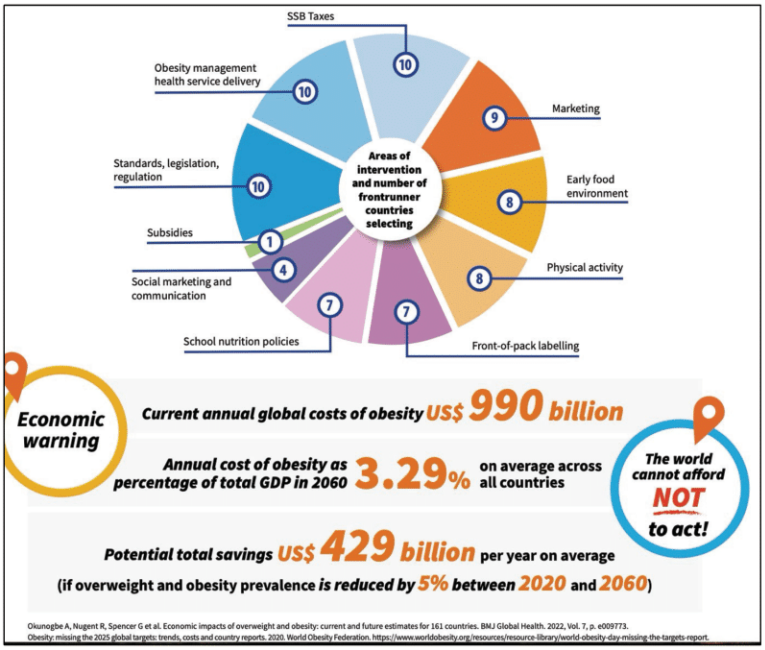

Figure 5. Obesity Interventions prioritized by countries
Source: *Okunogbe A, et al, 2022*

Figure 5 showcases a diagram detailing various obesity interventions prioritized by frontrunner countries. Central to the graphic is a circular layout, indicating different strategies such as SSB (sugar-sweetened beverage) taxes, marketing, and school nutrition policies, along with the number of countries implementing each intervention. The areas of intervention are color-coded, with "Obesity management health service delivery" and "Standards, legislation, regulation" receiving the highest priority, each endorsed by ten countries. The infographic also emphasizes the significant economic impact of obesity, stating that the current annual global costs amount to $990 billion and could represent 3.29% of total GDP by 2060. Furthermore, it highlights a potential savings of $429 billion per year if obesity prevalence is reduced by just 5% between 2020 and 2060, underscoring the urgency of action in combating obesity. [6] It is this recognition of challenge of rising obesity that globally, the need for simplified definition and approach to obesity management is being recommended.

Figure 6 below highlights the recent approaches to preclinical and clinical obesity classifications, proposed at global level.

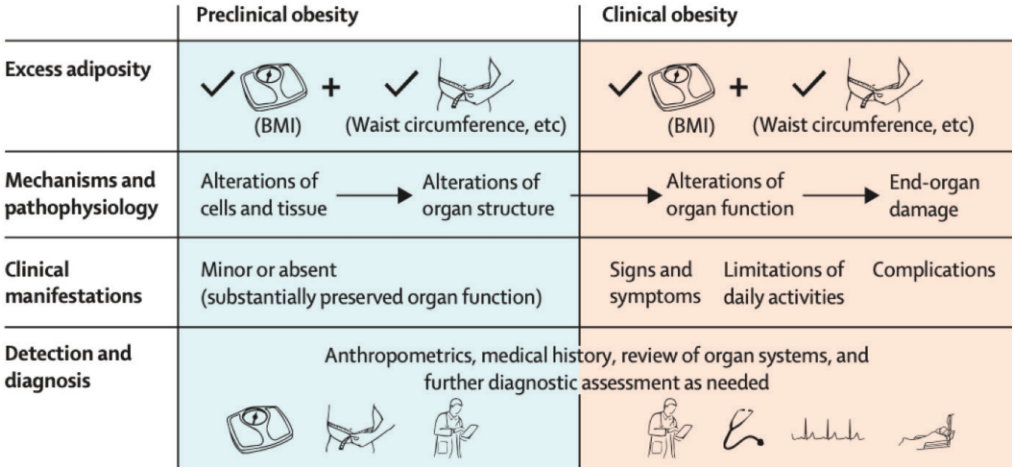

Figure 6. Preclinical and clinical obesity
Source: *Lancet Commission on Obesity, 2025*

Section 1:

Obesity: A Disease, Not Just a Risk Factor

Burden and epidemiology of obesity in India

Modern medical consensus recognizes obesity not merely as a risk factor for other health conditions but as a chronic, multifaceted disease in its own right. Characterized by excessive and abnormal fat accumulation, obesity alters metabolic pathways and exacerbates systemic inflammation, which drives numerous comorbidities. This classification underscores the necessity of addressing obesity with the same seriousness as other chronic diseases, requiring comprehensive prevention, management, and policy strategies tailored to the needs of affected populations.

Overweight, or obesity, is a chronic condition that arises from a combination of social and environmental factors and a person's inherited propensity to gain weight. When excessive fat accumulation reaches a level that poses a risk to an individual's health, it results in overweight or obesity. [26]. "Abnormal or excessive fat accumulation that presents a risk to health" is how the World Health Organization defines overweight and obesity. It is a persistent, chronic, relapsing illness characterized by excessive body fat that can harm one's health [27]. The definition of obesity according to different international organizations is displayed in Table 1 [9-19]. Obesity is define as "a chronic multifactorial and multidimensional syndrome characterized by an inappropriate percentage or distribution of adipose tissue associated with multisystemic comorbidities and complications, which require long-term mitigation and management" after taking all of these factors into account.

Globally, obesity rates have tripled since 1975, and experts now classify it as a pandemic [7]. According to a WHO report, about one-third of the global adult population is overweight, and nearly one in ten is obese [27]. Lower-income countries have experienced the steepest rise in obesity rates over the past decade, while no country has reported a decrease in overall obesity levels. Furthermore, none are on track to meet the WHO's target of maintaining 2010 obesity levels by 2025. Estimates suggest that by 2035, more than 4 billion people worldwide will be classified as overweight or obese (BMI $\geq 25\,kg/m^2$), a significant increase from 2.6 billion in 2020. This rise translates to over 50% of the global population being affected by 2035, compared to 38% in 2020. Specifically, obesity (BMI $\geq 30\,kg/m^2$) is projected to affect nearly 24% of the population, or around 2 billion individuals, by 2035, compared to 14% in 2020 [28].

In the Asia-Pacific region, approximately 1 billion adults live with overweight or obesity and a similar situation is expected in India, with nearly 11% of the population expected to live with obesity

by 2035.[29] In India, obesity is rising sharply, similar to trends in other countries. According to World Obesity reports, the prevalence of obesity (BMI ≥ 24 kg/m^2) in India is about 11%, which is higher than in many other low-middle-income countries and comparable to rates in high-middle-income countries. According to the National Family Health Survey-5 (NFHS-5) the prevalence of overweight and obesity (BMI ≥ 22.9 kg/m^2) was 44.02% among men and 41.16% among women. This marks a relative increase of 6.37% in men and 5.10% in women compared to NFHS-4 findings (37.71% and 36.14%, respectively) [30].

The data also revealed sociodemographic disparities, with obesity rates being higher in northern, western, southern, and most northeastern states, while central and eastern states reported lower prevalence. An urban-rural divide in obesity a prevalence was also evident [31, 32]. About 13% to 50% of the urban population and 8% to 38.2% of the rural population are affected. [33] Obesity is more commonly seen in women compared to men and is increasing in children and adolescents.[33] The main contributors to this rise are adoption of sedentary lifestyle and consumption of energy dense foods.

Obesity in Childhood:

The World Obesity Federation reports that India's annual increase in childhood obesity is the steepest in the world, second only to Vietnam and Namibia, and estimates indicate that the country's adult obesity rate has more than tripled, according to the Economic Survey Report. According to data from the National Family Health Survey (NFHS-5), the prevalence of obesity among males aged 18–69 increased from 18.9% in NFHS-4 (2015–16) to 22.9% in NFHS-5. Among women, the proportion rose from 20.6% to 24%. The trend is also concerning for children, as the percentage of overweight children increased from 2.1% in NFHS-4 to 3.4% in NFHS-5. [30]

The Longitudinal Ageing Study in India (LASI), conducted in 2017-18 among over 73,000 adults aged 45 years and older, reported an overall overweight prevalence (BMI > 22.9 kg/m^2) of 14.02% and obesity prevalence of 27.1%. LASI findings showed that older women were more likely to be obese (32%) compared to older men (21.4%), differing from NFHS results [26]. Similarly, the ICMR-INDIAB study among adults aged 20 years and older estimated a 28.6% prevalence of generalized obesity (BMI ≥ 25 kg/m^2) and 39.5% prevalence of abdominal obesity (waist circumference ≥90 cm for men and ≥80 cm for women) [34]. These findings align with trends observed in national surveys.

While most obesity estimates focus on adults, national-level data for children and adolescents remain limited. This is concerning because global obesity rates are projected to increase most rapidly among these groups, rising from 10% to 20% in boys and from 8% to 18% in girls between 2020 and 2035 [28]. To address this gap, the Comprehensive National Nutrition Survey (CNNS) 2018-19 was conducted in India, offering a detailed analysis of the nutritional status of pre-schoolers (0–4 years), school-aged children (5–9 years), and teenagers (10–19 years), with a total sample size of 112,245 participants. A secondary analysis involving 65,562 individuals with biochemical data reported the prevalence of overweight and obesity as 2.69%, 4.18%, and 4.99% in these groups, respectively [35]. Additionally, studies have shown that Asian Indian children, even those with normal weight, are at risk for cardiometabolic issues, with these risks being significantly higher in overweight children [32].

Variations in Obesity

Asian Indian obesity differs from that of white Caucasians as Asian Indians have more total, truncal, intra-abdominal, and subcutaneous adipose tissue.[33,35] The metabolic syndrome is intimately linked to fat accumulation in ectopic tissues such as the liver, pancreas, dorso-cervical region (also known as the "buffalo hump"), and beneath the chin (also known as the "double chin").[36]

A notable characteristic of the South Asian population is the "normal weight obesity"

Sort out our children to sort out the epidemic of obesity.

- *Dr. Vivek Bindal*

phenotype, where individuals have high body fat despite a normal BMI [30]. For instance, a study conducted in Kerala revealed that about one-third of the population exhibited this condition [37]. Another variation is sarcopenic obesity, which involves both obesity and sarcopenia. Diagnosing sarcopenic obesity requires measuring BMI or waist circumference with ethnicity-specific thresholds and assessing muscle mass and strength. Sarcopenia refers to the age-related loss of skeletal muscle mass and strength, which can start as early as the fourth decade of life. Studies suggest that skeletal muscle mass decreases progressively, with individuals losing up to 50% of their muscle mass by the age of 80 [38].

Sociodemographic and Ethnic Influences on Obesity in India

Recent studies highlight a rapid rise in overweight and obesity rates among adults in India, largely driven by changes in sociodemographic factors such as lifestyle shifts, work culture transitions, substance use, reduced physical activity, and unhealthy eating habits. Key contributors to this trend include age, urban residency, higher wealth index, access to clean fuel and sanitation facilities, and poor dietary patterns [39].

Ethnicity and socioeconomic status significantly influence Body Mass Index (BMI) in both men and women. Individuals with mixed ancestry from high-risk groups tend to exhibit intermediate obesity risks, while certain ethnic groups are more predisposed to obesity-related health complications. For example, Indian males have a higher likelihood of being overweight compared to White British males. A study examining the relationship between ethnicity and obesity across Indian regions found that body fat deposition was highest among both males and females from Delhi. [40].

Research by Luke et al. identified environmental factors as key drivers of ethnic differences in obesity [41]. Kapoor et al. further highlighted variations among South Indians, North Indians, and Northeast Indians, noting differences in obesity's impact on cardio-respiratory health [40]. These disparities in adiposity and intermediate traits in mixed-ethnicity individuals are likely influenced by both genetic and environmental factors [42]. Additionally, differences in energy intake, physical activity, and body composition—such as fat vs. muscle and abdominal visceral vs. subcutaneous fat—vary among ethnic groups due to genetic predispositions [43]. The 2014 INDIA-ICMR study reported high levels of physical inactivity in India, with a prevalence of 54.5%. Urban areas had higher inactivity rates (60%) compared to rural areas (50%), with women being less active than men [44].

The primary objective of this white paper is to present an in-depth analysis of the current state of obesity care in India, including prevention, management, and policy measures. By highlighting successful interventions, identifying gaps, and drawing lessons from international best practices, this review aims to offer actionable strategies for addressing the obesity epidemic. Furthermore, it seeks to outline a vision for the future, emphasizing innovations in care delivery, community engagement, and policymaking to combat this growing public health challenge.

Section 2:

Approach Adopted to Develop this White Paper

This policy review on obesity care in India was conducted to analyse existing frameworks, identify gaps, and propose actionable recommendations. The study utilized a systematic review methodology, including both primary and secondary data sources. Policies and programs were identified through a comprehensive search of government publications, peer-reviewed journals, and reports from global and national health organizations such as the WHO and the Ministry of Health and Family Welfare (India). A Comprehensive literature review of articles available on PubMed was also conducted to analyse existing data.

Key stakeholders, including healthcare providers, policymakers, and public health experts, were consulted to understand the ground realities of obesity management. A number of subject experts were interviewed & their opinion & inputs were ues & incorporated. The framework for analysis included evaluating policies on prevention, treatment, awareness, and infrastructural support for obesity care, with a focus on alignment to global best practices. A SWOT analysis was conducted to identify inconsistencies in implementation and barriers at different levels. Recommendations were formulated based on findings, with an emphasis on scalability, feasibility, and cultural adaptability to the Indian context.

A situational analysis was done with specific objective to assess the current burden of obesity and the methods used for its evaluation in India, identify treatment gaps, explore emerging treatment options for obesity and their relevance to the Indian context, establish effective management strategies, and develop a practical treatment algorithm for obesity management.

Section 3:

Why Obesity Care need Urgent Attention?

Obesity presents a significant public health challenge and requires immediate and focused action. The following data points and trends from the WHO document emphasize the urgency:

- **Epidemic Proportions:** Obesity has reached epidemic levels globally, with projections indicating that over one billion adults will be classified as obese by 2030. [7]
- **Global Prevalence:** Previously associated primarily with high-income countries, obesity is increasingly becoming a concern in low- and middle-income countries, affecting lower socio-economic groups disproportionately. [7]
- **Health Risks:** Individuals with obesity face a significantly higher risk for chronic diseases, including diabetes, cardiovascular diseases, and certain types of cancer, which collectively place a heavy burden on healthcare systems. [7]
- **Inequalities:** The obesity pandemic amplifies social and economic inequalities, disproportionately impacting marginalized communities and contributing to a cycle of poor health outcomes.
- **Global Nutrition Targets:** Addressing obesity is pivotal for meeting the 2025 Global Nutrition Targets and is crucial for achieving Sustainable Development Goal (SDG) target 3.4, which aims to reduce premature mortality from noncommunicable diseases by one third by 2030.[8]

Table 1: Definition of obesity by different organizations and communities worldwide. (9-19)

Society	Definition
The Scottish Intercollegiate Guideline [9]	Obesity is defined as a disease process characterized by excessive body fat accumulation with multiple organ-specific consequences
The World Obesity Federation [10]	Obesity is a chronic relapsing disease process, defined by excessive adiposity that may impair health
American Medical Association [11]	Obesity is a disease state with multiple pathophysiological aspects requiring a range of interventions to advance obesity treatment and prevention

Society	Definition
American Association of Clinical Endocrinologists and the American College of Endocrinology [12]	Obesity is a complex, adiposity-based chronic disease (ABCD), where management targets both weight-related complications and adiposity to improve overall health and quality of life
Obesity Canada [13]	Obesity is a chronic and progressive disease similar to diabetes or high blood pressure
American Society for Metabolic and Bariatric Surgery [14]	Obesity is a chronic progressive disease resulting from multiple environmental and genetic factors
American Heart Association [15]	Obesity is a multifactorial disease with a complex pathogenesis related to biological, psychosocial, socioeconomic, and environmental factors and heterogeneity in the pathways and mechanisms by which it leads to adverse health outcomes
European Association for the Study of Obesity [16]	Obesity is an adiposity-based chronic disease. ABCD incorporates the characteristics of adiposity, including the total amount, distribution, and function of adipose tissue.
Royal College of Physicians [17]	Obesity is not a lifestyle choice caused by individual greed but a disease caused by health inequalities, genetic influences, and social factors
The Singapore Ministry of Health [18]	Obesity is a condition of excessive body fat with adverse effects on health and is an increasing global problem that contributes to chronic disease burden and healthcare costs
Malaysian Association for the Study of Obesity and Malaysian Diabetes Association [19]	Obesity is a complex, multifactorial condition characterized by excess body fat. It must be viewed as a chronic disorder that essentially requires perpetual care, support, and follow-up.
Endocrine Society of India [20]	Obesity is a chronic, relapsing progressive disease defined by excessive adiposity that may impair health. The management of obesity should follow the approach that is followed for any chronic disease, i.e., initiate interventions and keep titrating these with time in order to achieve our treatment goals.

Key Points on the Public Health Challenge of Obesity

- **Rising Global Challenge:** Obesity is a significant global health issue, with 650 million obese and 1.9 billion overweight adults globally as of 2016, according to WHO estimates. [21]
- **Tripling Prevalence:** The prevalence of obesity has nearly tripled worldwide between 1975 and 2016, affecting both high-income and low- to middle-income countries. [22]
- **India's Growing Burden:** India is witnessing a sharp rise in obesity across all age groups, driven by urbanization, dietary transitions, sedentary lifestyles, and genetic factors like the "thin-fat Indian" phenotype. [3]
- **Chronic Disease Link:** Obesity is a key contributor to non-communicable diseases (NCDs) such as diabetes, cardiovascular diseases, and certain cancers. [23]
- **Economic Impact:** Obesity imposes a substantial economic burden, increasing healthcare costs and reducing workforce productivity. [21]
- **Mental and Social Impacts:** Beyond physical health, obesity affects mental well-being and exacerbates social stigma, making it a multifaceted public health concern. [23]
- **Urgent Need for Action:** Obesity should be

recognized and treated as a chronic illness, requiring immediate interventions in screening, treatment, and prevention strategies.

- **Effective Weight-Loss Programs:** Targeted interventions for high-risk groups can reduce both medical costs and the financial burden on health systems.
- **Holistic Approach in India:** Endocrinology experts emphasize the need for comprehensive obesity management strategies, including epidemiological understanding, clinical implications, and affordable treatment options.
- **Policy Recommendations:** Advocates for the integration of obesity care into public health systems, promoting affordable weight-loss strategies and accessible prescription drugs.

Risk factors for obesity:

Obesity is influenced by multiple factors, including changes in diet, physical activity, and genetics. Dietary transitions have played a significant role, as traditional, nutrient-rich foods are increasingly replaced with processed and calorie-dense options. Sedentary lifestyles, characterized by long hours of sitting and minimal physical activity, have become more common with advancements in technology and desk-based jobs. Urbanization has further contributed by reducing opportunities for physical activity, such as walking or cycling, due to limited open spaces and increased reliance on vehicles. Additionally, genetic predispositions like the "thin-fat Indian" phenotype make some individuals more prone to accumulating body fat despite having a normal body weight, increasing their risk of obesity-related health issues.

Urbanization has significantly increased the risk of obesity by encouraging sedentary lifestyles and reducing physical activity. City life often involves long commutes, desk jobs, and limited access to recreational spaces, leaving little room for exercise or active living. Moreover, urban areas are dominated by fast food outlets and processed food options, leading to unhealthy eating habits. The convenience of modern technology, from online shopping to digital entertainment, further reduces physical activity. Combined, these factors create an environment that promotes weight gain, making urbanization and sedentary behaviours major contributors to the rising prevalence of obesity.

Impact of Obesity

The increase in obesity has led to increase in associated co-morbidities like Type2 Diabetes mellitus (T2DM), hypertension, dyslipidemia, coronary heart disease (CHD), Metabolic Dysfunction-associated Steatotic Liver Disease (MASLD), obstructive sleep apnoea and certain cancers. Being overweight and obese are two of the most common lifestyle disorders that create extra health issues and contribute to a variety of chronic diseases such as T2DM, cancer, cardiovascular disease (CVDs), and metabolic syndrome (MetS) [7]. The occurrence of multiple morbidities causes financial burden on the individual and the health care resources. Direct and indirect effects of obesity account for 10% of healthcare costs. Taking steps to prevent, manage, and treat obesity is expensive. Obese people spend 32% more on medical costs than people of normal weight. Beyond direct medical expenses, obesity incurs significant indirect costs, such as expenses related to accessing healthcare, economic losses from premature deaths, absenteeism, and reduced work productivity. Direct costs account for 32% of total obesity-related expenses, while indirect costs make up 68% [25]. Obesity has a large number of short- and long-term complications, as well as a potential economic impact [14]. Hence, it is important for physicians in India to diagnose and initiate early treatment to halt the progressive increase in body weight and development of co-morbidities.

Obesity is on the rise globally, with roughly 20% of ICU patients suffering from it [1]. Adipose tissue is metabolically active, and visceral adipose tissue, in particular, has a negative adipocyte secretory profile, leading to IR, persistent low-grade inflammation, T2DM, hypertension (HTN), CVDs, dyslipidemia, obstructive sleep apnoea, chronic

Obesity is not just a health issue; it's a national economic and social challenge.

- *Dr. Purushottam Giri*

kidney disease (CKD), Metabolic dysfunction-associated steatotic liver disease (MASLD) and hypoventilation syndrome, physical impairments [7].

Overweight and obesity are responsible for over 3.4 million deaths annually, contributing to 4% of years of life lost and at least 4% of global disability-adjusted life years (DALYs) [24]. The prevalence of obesity in India is projected to rise to 57% of the population. The growing prevalence of obesity is expected to have a substantial impact across various settings, with significant economic consequences. The annual cost of overweight and obesity to the Indian economy is estimated at $23.2 billion, equating to 1.7% of the country's GDP. This estimate, based on sensitivity analysis, considers the value of life expectancy gains from preventing premature deaths. Without effective public health interventions, including screening, treatment, and awareness initiatives, the economic burden could rise to nearly $440 billion by 2060, representing a 19-fold increase. India ranks third globally in projected obesity-related economic burdens, following China and the United States [6].

A report from the World Obesity Federation in 2017 projected that India will spend $13 million annually on treating obesity-related diseases by 2025 while another study estimates the obesity costs to range between 0.8% and 2.42% of GDP in eight countries, including India, Australia, Brazil, and South Africa. These figures underline obesity's economic toll as a major obstacle to development [6]. As highlighted in Yoong's review, societal cost savings from addressing obesity are likely to be much greater than currently estimated [21].