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Junk Food Consumption Causing Obesity Pandemic in India

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ABSTRACT: In terms of epidemiology, demographics, and dietary habits, India is undergoing several changes. The startlingly high rates of childhood undernutrition in India, together with the rapidly rising prevalence of chronic illnesses and their risk factors, like obesity and overweight, across all social classes, are making the country's health issues worse. Obesity has emerged as a major public health concern affecting individuals of all ages. India is reportedly ranked third (just behind US and China) among nations with the highest rates of obesity. In this paper we study and analyse the trends in obesity in India and examine the leading cause for such concerning rise in obesity in the nation. This will help government formulate the policy responses appropriately to tame the rising trend in obesity and to confer to Sustainable Development Goals (SDGs) by 2030.

KEYWORDS: Health, Education, Welfare, Government expenditures and policies

1. INTRODUCTION

India is a developing country with fast rise in its GDP and National Income. In fact it is one of the fastest growing economies in the world. However, on welfare front India's progress has been slow and consistent. There are substantial improvements in many facets of development in the nation like rise in school enrolment rates, reduction in poverty yet a lot to achieve in many other dimensions. In terms of epidemiology, demographics, and dietary habits, India is undergoing several changes. The startlingly high rates of childhood undernutrition in India, together with the rapidly rising prevalence of chronic illnesses and their risk factors, like obesity and overweight, across all social classes, are making the country's health issues worse. Obesity has emerged as a major public health concern affecting individuals of all ages. The prevalence of a "obesogenic environment," which includes easy access to bad food and limited space for recreational activities, may be to blame for the rise in obesity cases. India is reportedly ranked third (just behind US and China) among nations with the highest rates of obesity by Lancet study, "Global, regional, and national prevalence of overweight and obesity in children and adults during 1980-2013: A systematic analysis for the Global Burden of Disease Study 2013". If the condition is not treated, it might potentially spark a pandemic. A balanced diet with restricted calorie intake and consistent physical exercise must be practised from an early age in order to treat this nutritional problem. In addition to individual-level initiatives, government's support for health-related initiatives will help in tracking and managing the obesity epidemic's exponential rise.

According to the World Health Organization, health is a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Owing to the widespread prevalence of overweight and obesity, many people may not achieve

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the WHO-recommended level of well-being, which can lead to serious health problems. The accumulation of superfluous fat, which impairs the body's ability to function, can be characterised as obesity. Energy imbalance, which happens when the body consumes less energy than it actually has, and a rise in the quantity of stored calories are associated with obesity. Several anthropometric measures and indices are computed to assess the degree of obesity and central obesity (obesity surrounding the belly). A straightforward indicator called the Body Mass indicator (BMI) or Quetelet Index is used to quantify obesity, while the waist circumference is used to measure central obesity.

According to World Health Organisation, an individual's BMI should normally fall between 18.5 and 24.9 kg/m2, with any rise in the figure indicating the degree of overweight. A person is termed overweight if their BMI is between 25 and 29.9, and obese if their BMI is greater than 30. As per World Health Organisation, during 1975-2016, the occurrence of obesity nearly tripled globally. Once viewed as an issue in affluent countries, obesity is now seen differently in low- and middle-income countries. The Global Burden of Disease study estimates that 5.02 million premature deaths in 2019 were attributable to obesity, which is over six times the deaths from HIV/AIDS during the year. In 2019, over 8% of all fatalities were attributable to obesity globally and it was a mere four percent in 1990. The epidemic and prevalence of obesity throughout the world are so widespread that a new term called "globesity" has been coined.

2. IMPACT OF OBESITY

Almost every element of health is negatively impacted by excess weight, particularly obesity, from cognition and mood to respiratory and reproductive systems. Obesity raises the risk of numerous fatal and crippling illnesses. Weight has a direct correlation with a number of cardiovascular risk factors. Blood pressure, triglycerides, blood sugar, inflammation, and low-density lipoprotein, or "bad," cholesterol all rise with BMI. An elevated risk of coronary heart disease, stroke, and cardiovascular mortality results from these alterations. Obesity can affect conception as well as other aspects of reproduction, including sexual activity. A traditional U-shaped curve illustrates the relationship between fat and infertility in women, specifically ovulatory infertility. According to the Nurses' Health Study (NHS), infertility rose with higher BMIs and decreased with lower BMIs among women with BMIs between 20 and 24.

Being overweight affects respiratory function through metabolic and mechanical processes. For instance, the build-up of visceral fat can weaken the respiratory muscles, impair the flexibility of the chest wall, and constrict the airways in the lungs, whereas the accumulation of abdominal fat may restrict the diaphragm's descent and, therefore, lung expansion. Bones, muscles, and joints are strained mechanically and metabolically when an individual is overweight. Obesity is strongly correlated with osteoarthritis of the knee and hip, and one-third of joint replacement surgeries include obese individuals. Additionally, obesity raises the risk of musculoskeletal disorders that can cause disability, lower limb discomfort, and back pain. Given the adverse consequences of obesity on multiple aspects of health, it increases chances of premature mortality.

Obesity can also affect mental health of a person, increasing the risk for developing long-term stress, body image problems, low self-esteem, depression, and eating disorders. Studies show that people with excess weight or obesity are also likely to face weight-related bias at school and work, which may cause long-term harm to their quality of life. Losing extra weight improves one's perception of oneself, one's body, and lessens depressive symptoms.

Obesity also has economic costs for the economy- direct and indirect costs. Services for its diagnosis, treatment, and prevention may be included in direct medical expenditures. Indirect expenses include lost productivity and are associated with illness and mortality. Workers' absences due to health issues connected to obesity reduces their productivity at work and adversely affects their income and output. In addition to raising healthcare expenses on an individual, national, and international level, obesity reduces life expectancy and its quality. Thus obesity makes large population of a nation a burden than an asset of human capital. The good news is that reducing weight can reduce some of the hazards associated with obesity and health can be greatly improved by even a slight decrease in body weight.

3. REVIEW OF LITERATURE

Due to significant transformations in nutrition patterns, epidemiology, and demography in India and while grappling with alarming rates of childhood undernutrition, there has also been a swift surge in chronic diseases and associated risk factors, such as overweight and obesity, affecting diverse segments of the population. These dual challenges are exacerbating the health issues faced by India as per Khandelwal and Reddy (2013).

Studies by Gómez (2023) and (Ahirwar & Mondal, 2019) pointed out that in the early 21st century, India confronted a burgeoning challenge of non-communicable diseases (NCDs), notably overweight,

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obesity, and type-2 diabetes, mirroring the situation in Mexico. The responsible factors for this health crisis included the implementation of free market reforms in the 1990s, an influx of foreign direct investment, the rise of a burgeoning middle class, and shifts in dietary patterns. Despite these developments, India's government was notably slow in formulating a comprehensive national policy response to NCDs, as indicated by Gómez in 2018. The government's focus during the 1990s and early-2000s on poverty and malnutrition was a major impediment to addressing the rising prevalence of overweight and obesity, which was initially perceived as a disease of luxury among the affluent upper-middle classes.

Saha eta.al (2023), in their study attempted to assess prevalence of excess weight and to examine the behavioral and sociodemographic factors associated with excess weight and its health consequences for older Indian adults using the data from Longitudinal Ageing Study in India (LASI) wave 1 (2017–18). A total sample of 25,952 older adults (equal and above 60 years) was selected for the study.

Results indicated that one in every four Indians aged 60 and above grapples with excess weight. This unexpected high incidence of over-weight and obesity among older adults prompts a deeper exploration of this noteworthy public health concern. The higher levels of excess weight (than the national average of equal and more than 22.7%) were there in older adults in states like Haryana, TN, Telangana, Maharashtra, Gujarat, Manipur, Goa, Kerala, Karnataka, Himachal Pradesh, Punjab, Sikkim and some other states. Moreover, the data underscores a gender disparity, with a notably higher percentage of women experiencing excess weight compared to men (38–40%).

Their study reported that in the context of EMDEs like India, women often exhibit lower levels of physical activity than men, contributing to an elevated risk of overweight and obesity. This disparity may be attributed to various socio-cultural factors influencing lifestyle choices. However, the situation takes a different turn in high-income countries, where women may not be disadvantaged in terms of physical inactivity and healthy dietary habits. This divergence in patterns underscores the complex interplay of socio-economic factors, cultural norms, and lifestyle choices in shaping the prevalence of excess weight, especially among older adults.

4. OBJECTIVES

The main objectives of this paper are -

i. Analyses Indian trends in obesity from 2008-2023.
ii. Examine factors leading to obesity rise in India.
iii. Identify the current scenario of our present generation/gen health's life.
iv. Policy implication

5. METHODOLOGY

We have investigated the secondary data to analyse current Indian trends in obesity. Data from National Family Health Survey (NFHS) has been used to study trends in obesity from the period 2008-2023 and Body Mass Index (BMI) has been used to investigate obesity in accordance with the NFHS surveys. Socio-demographic characteristics and anthropometric estimates of respondents from NFHS have been analysed.

6. OBESITY IN INDIA

Malnutrition rates in India are well-known to be elevated beyond those of sub-Saharan Africa. However, it's also where obesity has exploded in recent years, becoming a national emergency. NFHS data indicates that thousands of Indian children continue to suffer from malnutrition, including both overnutrition and undernutrition. Malnutrition is described as an insufficient intake of vital minerals, vitamins, and fibre in food, whereas overnutrition is defined as an excessive consumption of meals that are high in calories but low in nutrients. The NFHS provides information and statistics on health and nutrition, population for India and its all the states/ union territories (UTs). We examined the data on obesity from last three rounds of NFHS- NFHS 3 (2005–2006), NFHS 4 (2015–2016), and NFHS 5 (2019–2021). NFHS surveyed and collected data of 109,041 households with 74,369 men and 124,385 women in 2005-06; 601,509 households with 112,122 men and 699,686 women in 2015-16; 109,041 households with 74,369 men and 124,385 women in 2019-21 across India spanning all states and UTs.

The Body Mass Index is used as an indicator to measure obesity in all the rounds of NFHS. BMI greater than 25 kg/m2 indicate an overweight person while BMI of over 30 kg/m2 represents obesity. According to NFHS, the combined incidence of overweight or obesity (BMI ≥25 kg/m2) among men and women of 15-49 years of age increased from 9.3% to 22.9%, and 12.6% to 24% respectively, over the 15 year period. This demonstrates that about 25% of Indians, including men and women, are already overweight or obese. The percentages of overweight or obese in Indian males were 9.3% in NFHS 3, 18.9% in NFHS 4, and 22.9%, in NFHS 5, depicting an approximately 2.5 fold increase. The prevalence doubled in women, accounting for 12.6% in NFHS-3, 20.5% in NFHS-4, and 24.0% in NFHS-5. Over the past 15 years, there has been a more than twofold increase in obesity (BMI ≥30 kg/m2) in both men and women.

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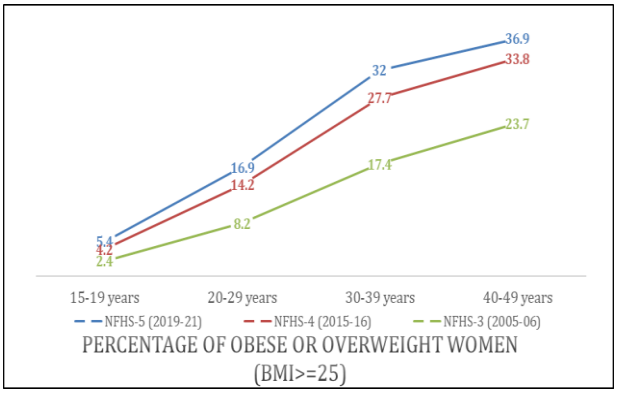
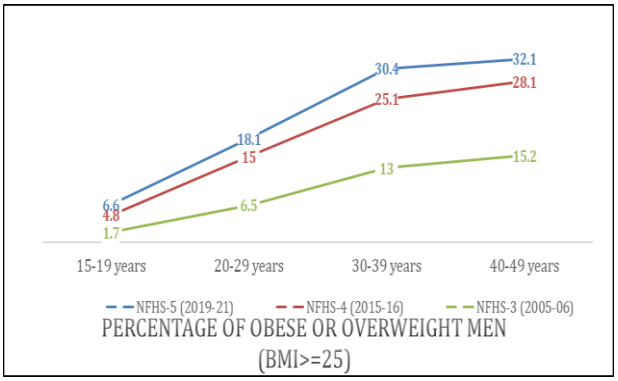
Since NFHS-3, there has been an continuous rise in occurence of overweight and obesity in both males and females in all states—northern, southern, western, eastern, and north-eastern.

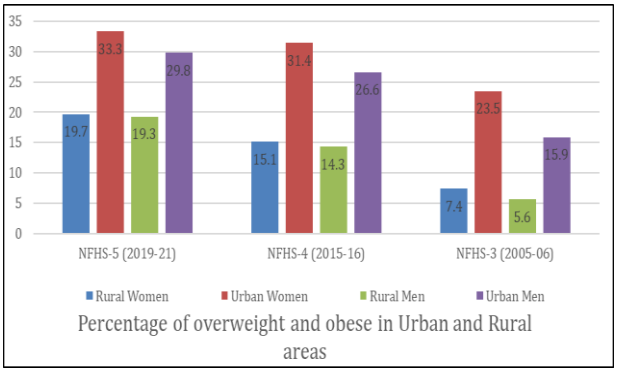
The graphs below depict a continuous rising trend in the obesity among both males and females in all age groups during 2005-06 to 2019-21. Obesity in women is higher than males in all the age groups in all years. Women are more obese than males in the most of states and union territories, with the exception of the north-eastern states. Women are known to be genetically predisposed to fat, and additional hormonal changes that occur during pregnancy, the premenopausal period, and after menopause, together with alterations in lifestyle and physical activity levels, all contribute to obesity. However, increasing rates of obesity in women is of greater worry than in men as obesity in women in the reproductive age can cause intergenerational transfer of obesity from mother to the child.



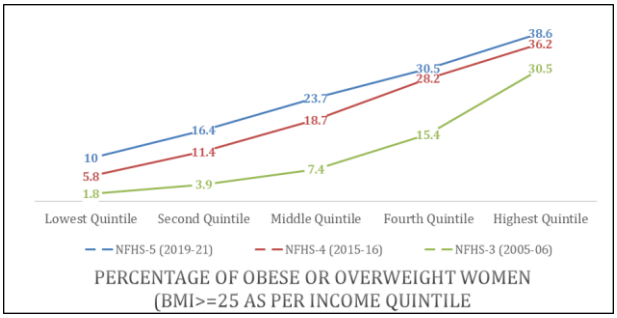


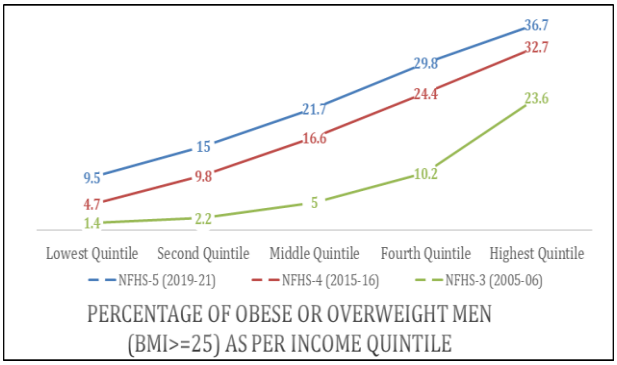
(Source- Graphs are based on NFHS data)

The data highlight the rising rates of central obesity and overweight/obesity in India's rural and urban areas, affecting both men and women. Urban obesity rates have continuously exceeded those of rural areas. Although it is observed, that the rate of increase in obesity has been higher for the rural areas than the urban areas. This can be due to the mechanisation of farming, the reduction of open space for recreational activities, increase in the intake of unhealthy, high-energy meals, etc.



The graph below shows the increase in obesity across various income quintiles, separately for males and females. The obesity has increased most in lowest income quintile. For females of lowest income class, obesity has shot more than 5 fold from mere 1.8% in 2005-06 to 10% in 2019-21; while for males it has increased from 1.4% to 9.5% during the same period. As evident from the graph, the rate of increase of rise in obesity is falling with the increase in income, for both males and females.





However, using BMI just by itself may not give a complete picture of obesity as the latter is effected by various other pathological and physiological conditions of an individual. WHO recommends waist-to-hip ratio (WHR), waist-to-hip ratio (WHR), and Waist circumference (WC), as suitable measures of abdominal obesity. Accordingly, the NFHS-5 measured the hip and waist circumferences, and waist-to-hip ratio (WHR) for men & women aged 15–49, for the first time. 56.7% of the surveyed women had high risk waist to hip ratio in 2019-21 while 47.7% men had high risk WHR. WHR

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forecasts abdominal obesity, linked to premature mortality, myocardial infarction, stroke, and type 2 diabetes mellitus are all linked to abdominal obesity.

7. Reasons for Increasing Obesity

In this section, we look at some of the major reasons for skyrocketing obesity in the nation. There are 4 reasons for obesity to increase at an increasing rate- Sedentary lifestyle; Excessive eating of processed and fatty foods; excess consumption of Colas and sugary drinks; and lack of exercise.

Kids today face greater pressure to study and perform well in school than ever before, and the little free time they do have is spent on social media, video games, and cell phones. Compared to previous generations, their lifestyle is far more sedentary. The Obesity Foundation of India attributes the problem of rising obesity to the prevalence of TV ads that promote unhealthy diets and bad eating habits. Processed foods are readily available in both rural and urban areas. In rural areas people lead less active lifestyles as a result of more mechanisation, better transportation, and higher living standards. As per a study by Indian Journal of Endocrinology and Metabolism obesity in rural Indians has increased to 17.1 percent in 2012 from 2 percent in 1989.

Unhealthy eating habits, such as consuming fast food, sugar-filled beverages, and fatty snacks high in dangerous fats impacts someone weight significantly. These behaviours have been influenced by the adoption of Westernised eating patterns, which include a poor consumption of fruits, vegetables, and whole grains and a high intake of processed foods, added sweets, and harmful fats. The primary cause of childhood obesity in contemporary India is the abundance of American-style malls, fast food restaurants, and newly acquired luxury, like air conditioning and vehicles, that have significantly altered the lifestyles of affluent families.

India is a diverse country with a large population that is well-known for its extensive culinary traditions. In their daily lives, Indians consume a lot of sugary foods, prepared meals, and inadequate nutrition. Today Indian diet is predominantly composed of fried and fatty meals than traditional healthy recipes which is bad for health of individuals of all ages. Everyday consumption of unhealthy street food is bad for their health. Street food, typically, has excessive amounts of sugar and salt, processed carbohydrates, and unhealthy fats. Most consumed street snacks such as samosas, vada-pav, and pakoras, are deep-fried in subpar oils and are heavy in fat and calories. Over processed and high-fat foods lack essential elements found in fruits and vegetables, such as vitamins, minerals, and dietary fibre. Blood sugar surges might result from snacks manufactured with refined flour, which has little nutritious value. Eating food that is deficient in nutrients can result in malnourishment, reduced immunity, and general health impairment.

These days its common to drink sweetened beverages like masala chai, cold coffee, and sodas with added flavours. These are the concerning factors that increase the likelihood of obesity, weight gain, and chronic illnesses including diabetes and heart problems. Children and teenagers are particularly vulnerable to the harmful effects of frequent use of such sugary drinks. Kids who consume excessive amounts of sugary drinks run the risk of gaining unhealthy weight and developing dental problems.

To make the matter worse, very few Indians exercise regularly. Globally, people are not exercising enough, and Indians are much less so. A pan-Indian study spanning 25 states by the Madras Diabetes Research Foundation reveals that less than 10% of individuals in India adhere to the World Health Organization's (WHO) recommended regimen of at least 150 minutes of moderate aerobic activity or 75 minutes of strenuous activity throughout the week. Indian Council of Medical Research and India Diabetes (ICMR-INDIAB) study, 2017-18, found that over half of urban Indians do not exercise enough, putting them at risk for non-communicable illnesses including diabetes, hypertension, and other conditions. While 41% of Indians nationwide do not participate in enough physical activity, the percentage rises to over 52% among urban adults. As per Physical Activity Profile of India (2022), by WHO, prevalence of inactivity is seen in 25% males and 44% females in 18+ age.

8. STATISTICAL DATA ON JUNK FOOD CONSUMPTION

The nation's rising obesity rates are mostly due to an increase in the consumption of fast food, junk food, and highly processed meals. According to a study by WHO-ICRIER published in 2023, “The growth of ultra-processed foods in India: an analysis of trends, issues and policy recommendations”, 93% children consume packaged food and 56% children consume sweet foods like chocolate and ice cream more than once a week. 59% children between the age 14 - 17 years consume packaged food or beverages at least once daily. 69% children consume breakfast cereals like cornflakes as their first meal of the day before going to school, and 83% youngsters drink milk-based beverages. 40% of children bring packaged food to school virtually every day. These figures are only the beginning. If we compile recent data and conduct a complete case study on junk food consumption in India, the results are probably going to be much more unsettling.

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Covid-19 pandemic had also boosted the consumption of unhealthy foods by people. According to a recent investigation of the COVID-19 pandemic's aftereffects, the University of Minnesota Medical School and School of Public Health found links to six poor eating habits. Simone's findings, published in the International Journal of Eating Disorders, found “six key themes of eating behavior changes: Mindless eating and snacking; Increased food consumption; Generalized decrease in appetite or dietary intake; Eating to cope; Pandemic-related reductions in dietary intake; and, a re-emergence or marked increase in eating disorder symptoms”.

The pandemic has negatively impacted India's eating patterns, with the country's intake of foods high in fat, sugar, and salt increasing more quickly since 2020. During the COVID-19 pandemic, the year-over-year (y-o-y) growth rate of the retail sales value of ultra-processed food witnessed a severe dip, falling to 5.50% (2020) from 12.65% (2019). However, following the pandemic, there seems to be a "V-shaped" rebound, with 11.29% increase between 2020 and 2021. During 2011–2021, chocolate and sugar confectionery held the largest market share in terms of retail sales value, followed by convenience and ready-made foods. Up until 2019, beverages ranked third; however, in 2021, salty snacks took the third spot. Despite the pandemic, per capita retail sales of convenience and ready-made foods have been rising quickly because they need less preparation time. In contrast, as people grew more health concerned, sales in many other categories, such as beverages, decreased. Carbonated soft drinks (CSDs) have the slowest pace of growth in the beverage category, both in terms of volume and value. Juices and milk-based beverages are gaining popularity among consumers in place of CSDs, however they may also contain a lot of added sugar. The predicted values indicate a steady increase in the consumption of ultra-processed foods; even though this consumption is lesser than that of home-cooked meals. We need to stop this upward trend in obesity epidemic that is already apparent in western nations and is rapidly spreading to India. (August 2023; WHO-ICRIER Report)

Nowadays, going out to eat has become very common. Dining out was a luxury that most Indians reserved for life's most momentous moments back in the 1980s. Think back to your early years and the number of times your parents could have gone out to eat. Better delivery methods, more convenience, and improved packaging are some of the elements that helped increase home deliveries, according to a National Restaurant Association of India poll. Without a doubt, the food service sector in India is changing significantly with technological advancements. Food deliveries to homes have significantly increased and so does the cloud kitchens.

These days, quick service restaurants, or QSRs, are everywhere. QSR is a casual eating establishment that prioritises speedy meal delivery. According to a report by Edelweiss Securities, the quick-service restaurant (QSR) market in India is anticipated to grow at a compound annual growth rate of 23% between 2021 and 2025 as major food chains like McDonald's, Domino's, and Burger King expand their presence in the country's smaller cities and capitalise on the country's younger population. According to the research, Covid has really started to support QSR choice, especially when customers have switched to well-known brands. Larger firms benefited greatly from the market's substantial supply being eliminated by the pandemic-induced shutdown. Over the following five years QSR chain market will expand at the fastest rate among all food services industry subsegments. The market for organised QSRs was worth Rs348 billion in 2020. Chains in the QSR market, which made up 54% of the whole QSR sub-segment in FY20 and are predicted to account for 64% of QSR sales by FY25, will be the primary driver of future development in the category. Jubilant Foodworks, the Indian operator of the Domino's pizza franchise, recently raised its possible store opening objective in India from the prior 2,000 to 3,000. Over 1,300 Domino's locations may be found in India, where it first began shop in the 1990s. Last year, the fast food company Burger King announced a spectacular IPO. The fast-food industry and QSR company are seeing growth like never before due to variety of causes, including expanding urbanisation, the quick spread of food delivery services, an increase in working professionals and millennials, rising disposable income in the nation, etc. QSRs are increasing their penetration in tier two and three cities in India.

This is extremely concerning as Noncommunicable diseases (NCDs) are a leading source of disease burden globally, and in the last 20 years, their effects have worsen. WHO reports that NCD-related fatalities accounted for three out of every four deaths globally in 2019 after rising from 31 million to 41 million between 2000 and 2019. According to ICMR, 2017, the percent of fatalities in India attributed to non-communicable diseases (NCDs) rose from 37.9% in 1990 to 61.8% in 2016. Diabetes, cancer, chronic respiratory diseases (CRDs), and cardiovascular diseases (CVDs) are the four main noncommunicable diseases (NCDs). These are associated with four behavioural risk factors: eating a poor diet, not exercising, and using tobacco and alcohol.

The incidence of overweight and obesity, and unhealthy lifestyles, are the primary causes of the high and rising

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diabetes burden worldwide, particularly in emerging nations like India. According to estimations from the Madras Diabetes Research Foundation and ICMR, 77 million people in India had diabetes in 2019, and it is projected to be nearly 134 million by 2045. As per a recent research published in the Lancet 11.4% of the nation's total population is estimated to have diabetes in 2020. A survey by the health ministry of over 113,000 participants revealed that around 15% of Indians had pre-diabetes and approximately 35% had hypertension. It was carried out in 31 Indian states and UTs between October 2008 and December 2020. The incidence of diabetes, hypertension, and obesity in India is far higher than previously thought.

However, since the SDG period began in 2015, development has halted. None of the WHO regions will meet the SDG objective of a one-third reduction in premature death from the main NCDs by 2030 if the annual rate of reduction (ARR) in this area persists. No area will reach the SDG target for NCD mortality by 2030 without quicker improvement, and half still won't by 2048.

9. POLICY RECOMMENDATIONS

An active role of the government is ineluctable to mitigate the effects of this growing menace. A persistent, multi-sectoral approach combining the public, business, and health professional and non-governmental sectors is necessary to effectively address this obesity epidemic. Although the government has previously taken some action, it is insufficient and lacks vigor. Some particular suggestions given-

Government must establish a regional database on obesity across all age groups and launch a community-based studies to record the prevalence of obesity and related risk factors, then track these developments over time.

There should be high taxes on unhealthy food and subsidies must be given to nutritious foods. In India, currently, we don't have policies for either. Our GST rates are not aligned with nutrition content of the food.

The government should implement comprehensive food labelling foods that focus on nutrition value of the food. Although FSSAI already has a policy for food labelling, it has to be made more comprehensive in accordance with international standards and also need to extent to informal sector.

The government should limit and restrict advertising and marketing of unhealthy/ junk/ ultra-processed food items.

Health education should be imparted to people of all ages. It should be a compulsory subject for all students while adults can be educated through advertising and specific campaigns. Prominent figures and local advocates should support healthy lifestyles.

The government should implement a strict policy of no junk food or sugary drinks in and around school areas to protect young children from obesity.

Regular physical exercise must be made mandatory in all educational institutes for all the students at all the levels.

10. CONCLUSION

In this paper, we have presented an overview of the obesity -prevalence, causes, and effects. Urgent attention from all sectors, committed resources, policy support, and targeted actions are warranted to combat the dual burden of malnutrition. The health systems should be reoriented and strengthened, in addition to enabling actions in other sectors, to address prevention and control of non-communicable diseases and associated risk factors like overweight-obesity. These measures can be started at home, at childcare facilities, preschools, schools, or after-school programmes. To investigate the best approaches for obesity intervention, prevention, and treatment, further research is necessary. Early obesity prevention helps a child's health for the rest of their life. Avoiding meals high in calorie density alone won't stop obesity if there is little physical exercise, a low frequency of consumption of foods that promote health, and frequent skipping of breakfast and school lunches. The findings emphasise the significance of teens' nutrition education in forming good eating habits and an active lifestyle to reduce the risk of obesity and the detrimental effects of reduced family wealth, which encourage poor lifestyle and nutritional choices.

REFERENCES

Acharya, Subhendu. (2020). Rising burden of overweight and obesity among Indian adults: empirical insights for public health preparedness. Journal of Biosocial Science.

Arya C, Dubey N. A critical review on fast-food consumption pattern among South Asian and Southeast Asian young adults. Int J Community Med Public Health 2023;10:2282-90.

Ahirwar R and Mondal PR (2019). 'Prevalence of Obesity in India: A Systematic Review. Diabetes & Metabolic Syndrome: Clinical Research & Reviews, Vol 13, Issue 1, pp 318–321

Anjana, Ranjit & Pradeepa, R. Guha & Das, Ashok & Deepa, Mohan & Bhansali, Anil & Joshi, Shashank & Joshi, Prashant & Dhandhania, Vinay & Paturi, Vishnupriya Rao & Vasudevan, Sudha & Subashini, Radhakrishnan & Unnikrishnan, Ranjit

DOI: https://doi.org/10.48001/veethika.2023.09.04.005

& Madhu, S V & Kaur, Tanvir & Mohan, Viswanathan & Shukla, Deepak. (2014). Physical activity and inactivity patterns in India – results from the ICMR-INDIAB study (Phase-1) [ICMR-INDIAB-5]. The international journal of behavioral nutrition and physical activity. 11. 26.

Edelweiss Wealth Research, 'QSR SECTOR REVIEW', 2021

Gómez, Eduardo (2023), 'Government Response to Ultra-Processed and Sugar Beverages Industries in Developing Nations: the Need to Build Coalitions Across Policy Sectors', in *The Political Economy of Food System Transformation: Pathways to Progress in a Polarized World, Danielle Resnick (ed.), Johan Swinnen (ed.).*

Gómez, E.J. (2018), 'Geopolitics in Health: Confronting Obesity, AIDS, and Tuberculosis in the Emerging BRICS Economies.' Baltimore: Johns Hopkins University Press.

ICRIER, 2023. *The growth of ultra-processed foods in India - An analysis of trends, issues and policy recommendations*, Indian Council for Research on International Economic Relations. India.

Indrapal M, Nagalla B, Varanasi B, Rachakulla H, Avula L. Socio-demographic factors, overweight/obesity and nutrients associated with hypertension among rural adults (≥18 years): Findings from National Nutrition Monitoring Bureau survey. Indian Heart J. 2022 Sep-Oct;74(5):382-390.

International Institute for Population Sciences (IIPS) and National Programme for Health Care of Elderly (NPHCE), MoHFW (2021). Longitudinal Ageing Study in India (LASI) Wave 1, 20***17-18 : Factsheet - India***, International Institute for Population Sciences, Mumbai.

Khandelwal S, Reddy KS. Eliciting a policy response for the rising epidemic of overweight-obesity in India. Obes Rev. 2013 Nov;14 Suppl 2:114-25.

Ministry of Health and Family Welfare, Government of India, International Institute for Population Sciences M. National Family Health Survey (NFHS-3) 2005-06. India Fact Sheet.

Ministry of Health and Family Welfare, Government of India, International Institute for Population Sciences M. National Family Health Survey (NFHS-4) 2015-16. India Fact Sheet.

Ministry of Health and Family Welfare, Government of India, International Institute for Population Sciences M. National Family Health Survey (NFHS-5) 2019-21. India Fact Sheet.

Mukhra R, Kaur T, Krishan K, Kanchan T. Overweight and Obesity: A major concern for health in India. Clin Ter. 2018 Sep-Oct;169(5):e199-e201.

NCD Risk Factor Collaboration (NCD-RisC). Trends in adult body-mass index in 200 countries from 1975 to 2014: a pooled analysis of 1698 population-based measurement studies with 19·2 million participants. Lancet. 2016 Apr 2;387(10026):1377-1396. doi: 10.1016/S0140-6736(16)30054-X. Erratum in: Lancet. 2016 May 14;387(10032):1998. PMID: 27115820; PMCID: PMC7615134.

Pradeepa R, Anjana RM, Joshi SR, Bhansali A, Deepa M, Joshi PP, *et al.* Prevalence of generalized & abdominal obesity in urban & rural India – The ICMR-INDIAB study (Phase-I) [ICMR- NDIAB-3]. Indian J Med Res 2015;142:139-50.

Saha A, Muhammad T, Mandal B, Adhikary M, Barman P. Socio-demographic and behavioral correlates of excess weight and its health consequences among older adults in India: Evidence from a cross-sectional study, 2017-18. PLoS One. 2023 Oct 5;18(10):e0291920.

Praseeda Chandran, Tom Wilson, Serin Kuriakose, Suni K. Akbar, Althaf Ali, November 23, 2022, 'Hypertension control rate in India: systematic review and meta-analysis of population-level non-interventional studies, 2001–2022', *The Lancet Diabetes & Endocrinology*

Simone, Melissa & Emery Tavernier, Rebecca & Hazzard, Vivienne & Eisenberg, Marla & Larson, Nicole & Neumark-Sztainer, Dianne. (2021). Disordered eating in a population-based sample of young adults during the COVID-19 outbreak. International Journal of Eating Disorders. 10.1002/eat.23505.

Tandon N, Anjana RM, Mohan V, Kaur T, Afshin A, Ong K, *et al*. The increasing burden of diabetes and variations among the states of India: The global burden of disease study 1990–2016. Lancet Glob Health 2018;6:e1352-62.

Verma, Madhur & Das, Milan & Sharma, Priyanka & Kapoor, Nitin & Kalra, Sanjay. (2021). Epidemiology of overweight and obesity in Indian adults - A secondary data analysis of the National Family Health Surveys. Diabetes and Metabolic Syndrome Clinical Research and Reviews.

World Health Organization, 2016. Fact Sheet 311: Obesity and Overweight. Available from: http://www.who.int/mediacentre/ factsheets/fs311/en/.

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