

Anne Gu, PA School for Excellence in the Ag Sciences  
 The Shipley School, Bryn Mawr, PA, United States of America  
 India, Dietary Diseases

### **Combatting Overnutrition and Obesity in India**

The country of India is located in South Asia, bordering the Arabian Sea and the Bay of Bengal. India shares its eastern borders with Myanmar and Bangladesh and its northern borders with Pakistan, Nepal, China, and Bhutan. India spans a total of 3,287,263 square kilometers, with 2,973,193 sq km of land area and 314,070 sq km of water (CIA, 2024). According to the CIA (2024), 60.5% of this land is cultivated/used for agricultural purposes. The average farm size is about 2.7 acres, which is a little more than two football fields (International Trade Administration, 2021). India's major agricultural exports are rice, prawns, shellfish, buffalo meat, spices, and sugar; making up a \$11.8 billion trade surplus (International Trade Administration, 2021). The Himalayan Mountains are situated to the north, bordered by the Gangetic Plains and deserts to the west, with the Deccan Plateau (an upland plain) to the south. India's climate varies widely with the terrain, ranging from year-round snows in the Himalayas to tropical monsoon seasons on its western coast. Although India is ranked seventh in terms of area spanned, it is the most populous country in the world with a current population of about 1.437 billion, comprising 17.76% of the world population (Worldometer, 2024). Out of India's entire population, 36.3% of people live in urban areas (CIA, 2024). Most of the population is concentrated along the Ganges River or other bodies of water. Its government is a parliamentary republic, with the president serving as head of state and the prime minister as well as first citizen serving as head of government. In recent years, India's struggle with malnutrition has largely transformed from a fight against undernutrition to overnutrition. With the rise of huge corporations advertising junk food and selling it at affordable prices, many people now have ready access to foods high in calories but low in essential nutrients. This has resulted in the mass consumption of junk foods, which, along with other factors (such as sedentary lifestyles), has led to a surge in obesity rates. 40.3% of Indian people ages 18-93 were found to be obese (defined as having a BMI over 25), comprising 44.17% of people in urban areas compared to 36.08% of people in rural locations (Venkatrao et al., 2020). This obesity epidemic has been accompanied by rising rates in type 2 diabetes and cardiovascular disease, and its resulting cost to India has been projected to amount to \$129 billion dollars by 2035 (Bloomberg Originals, 2023).

A typical Indian household consists of three to four generations, on average about 4.41 people according to GlobalData (2021), that live together, spend, and contribute to the same funds (Chadda & Deb, 2013). Traditionally, most families are highly patriarchal, following a patrilineal line of descent (Chadda & Deb, 2013). Daughters leave their family home when they marry, joining their husband's household. A traditional Indian meal is usually plant-based and emphasizes balance, consisting of grains, spices, fruits or vegetables, and a dairy. In non-vegetarian diets, meat is typically served as a side dish. According to Salis et al. (2021), the traditional Indian diet fully covers all essential nutrients, supported by using various food processing and cooking methods. However, as megacorporations expand into developing countries such as India, many Indians are becoming increasingly exposed to hyper-processed and nutrient-empty foods. In part due to the COVID-19 pandemic, an increased number of people work from home and are unable to find the time or opportunity for exercise. This leads many Indians to lead a sedentary lifestyle.

Much of India's population is packed into dense cities such as New Delhi, Mumbai, and Kolkata. In 2021, the unemployment rate was estimated to be at 5.98% (CIA, 2024). Much of India's society is traditionally centered around a family unit and the caste system. People are born into a caste that decides their class and available job opportunities, with little room for social mobility. Although the legal system was

abolished, its influence is still present in society and is used as the basis for discrimination (Heitzman & Worden, 1995). On average, a typical 25-34 year-old earns a salary of about 14,400 INR (~174 USD), equating to about 25,500 USD annually in Mumbai (Tambe, 2024). Especially in urban centers, processed foods are becoming increasingly available and affordable due to megacorporations such as Nestlé, Unilever, and Kellanova expanding their markets.

One food barrier facing a typical Indian family is the overconsumption of junk food. As megacorporations have expanded into developing countries like India, they are able to advertise and sell these unhealthy foods to consumers effectively and cheaply (“India”, n.d.). As a result, junk food has become much more readily available to the typical family, meaning that consumers are able to purchase it more often for their households. In addition, according to Bloomberg Originals (2023), many Indian children state that they greatly enjoy eating junk foods such as potato chips, instant ramen, burgers, and more; both on a daily basis and during special events like birthday parties. Due to the hyperpalatability of many of these foods, many people have turned away from a traditional and balanced Indian diet in favor of over-processed foods (“Junk Food: Will Higher Taxes Break Our Addiction?”, n.d.). These junk foods are often ultra-processed, high in calories with little to no nutritional value, and extremely high in sugar or saturated fat. This leads consumers to eat a large amount of empty calories and is associated with a rise in BMI, resulting in obesity and other associated complications (NDTV, 2023).

The advent of junk food and the rise of the obesity epidemic in India are major concerns that affect the lives of over 1.4 billion people. Indians of all ages, areas, and levels of education are greatly affected by and subject to the obesity epidemic. A major contributor to this is the overconsumption of junk foods, which are high in calories but low in nutrients. The status of this problem is rapidly worsening, with India’s obesity rate predicted to increase by over 80% by 2035 (Bloomberg Originals, 2023). Obesity is cited as a contributing factor to numerous serious health problems, including: high blood pressure, cardiovascular disease, lung problems, fatty liver disease, increased risk of cancer and heart attacks, and more. Therefore, it is essential to find an effective solution to the obesity epidemic and its causes, fast.

From 2009 to 2022, sales of snack food and sodas have jumped from \$6.2 billion to \$32 billion (Bloomberg Originals, 2023). Many megacorporations selling ultra-processed foods have turned towards developing countries such as India in search of new markets for their products. As they have already been well-developed in mainly first-world countries, they are able to afford convincing, widespread advertisements and sell their products at lower prices, meaning that this junk food is more affordable, accessible, and appealing than healthier alternatives. To combat this, both the sale of snack food and sugary drinks and the corporations manufacturing them should be strongly taxed. This would raise both the shelf price and tax when junk food is purchased, making it less affordable for consumers to buy. By making buying unhealthy foods less appealing, customers may turn to healthier foods instead as a better priced alternative. In Mexico and Hungary for example, 8% and 4% taxes on junk foods were passed respectively; both countries saw around a 7% decrease in junk food purchases and an increase in healthier choices in following years (Belluz, 2018). India could impose a similar tax, which would most likely decrease junk food sales, therefore minimizing people’s risk for obesity as a result of overconsumption of junk food.

Improving access to healthier foods could also aid in relieving the obesity epidemic. Companies that traditionally sell junk foods could be incentivized to make their products healthier by offering reduced taxes. This would both make healthier foods more widely available and discourage companies from leaving India’s market as a result of increased taxation. Additionally, steps should be taken to alleviate the

issue of food deserts around India. Food deserts occur when a significant number of residents in an urban neighborhood live more than a mile away from a supermarket, or more than ten miles away for rural neighborhoods (Varshney, 2019). The impacted communities are disproportionately low-income and often have little to no consistent access to healthy and nutritious food options, leaving them vulnerable to health issues that arise over time such as obesity, type 2 diabetes, heart disease, and more (Robbins, 2020). To combat these food deserts, three major initiatives can be taken: the widespread establishment of supermarkets selling nutritious foods, creating urban gardens and farmers' markets, and constructing infrastructure to lower the distribution costs of fresh produce. All three of these measures would improve equitable access to and/or reduce the costs of healthier foods across all socioeconomic classes, resulting in healthier diets and lower risk of diet-induced obesity.

Overconsumption of highly processed foods and its resulting complications partially stems from a lack of understanding of just how harmful these foods are. In order to fix this, the government could initiate a country-wide campaign to better educate citizens on healthy eating and lifestyle choices. Widespread billboards and advertisements would contain information on the dangers of obesity and how to make better diet choices, motivating an increased amount of the population to live a healthier lifestyle. Additionally, schools would have mandatory classes teaching students about the basics of nutrition and a balanced diet, instilling the knowledge to achieve a healthy life in the future. By promoting a healthy lifestyle and making people aware of the side effects of overconsuming junk food, many people would be deterred from unhealthy eating habits, instead starting to consume healthier food and lead a better lifestyle, meaning a reduced risk of obesity.

The Indian government could also implement a campaign to promote a healthier, more active lifestyle for the Indian people. According to a study done by Venkatrao et al. (2020), people who exercised regularly had a much lower rate of obesity (32.56%) than those who did not (43.71%). From this, it can be seen that physical exercise is an effective factor in solving the issue of obesity. However, most people who do not exercise state that it is simply because they are unable to find the time to do so (Basu, n.d.). To remedy this, the government could promote exercise by building more sidewalks, parks, and gyms in order to create easier access to exercising in a daily routine. As mentioned earlier, advertisements on billboards and television would also be run emphasizing the importance of exercise to both physical and mental health, making people more aware of the benefits of being active and the dangers of a sedentary lifestyle. By improving accessibility and motivation for exercise, people are more likely to choose to incorporate exercise into their own lives, thereby decreasing their risk of obesity.

Funding for these solutions would come from three main sources: the revenue generated from taxing the sale of junk foods, participation of outside organizations, and the money saved from being spent on obesity-related healthcare. For example, the money earned by taxing companies selling junk foods could be funneled back into educational and fitness-promoting campaigns. Additionally, large megacorporations such as Nestlé, Unilever, and Kellanova could be engaged in healthy lifestyle initiatives. For instance, they could sponsor the construction of a local park or gym. Not only would this improve their brand image, it would also help provide a conducive environment for healthy living at low cost to India's government. Moreover, initiatives such as urban gardens and farmers' markets are a low cost solution, as they are mainly run by local communities and would require little funding from the government. Another source of funding could be from organizations such as the World Health Organization (WHO), which provides grants, funding, and technical support for health programs and construction of health or lifestyle facilities. As stated earlier, the obesity epidemic is expected to cost India \$129 billion dollars annually by 2035 (Bloomberg Originals, 2023). By first implementing some of the strategies above, the impending

obesity epidemic could be largely averted and the money saved could also be directed into funding for these solutions.

India's obesity epidemic is an increasingly serious problem. This is partially due to increased advertising of and easy access to ultra-processed snacks and drinks, leading many Indians to overconsume these foods. By implementing various strategies such as: starting nutritional education initiatives, taxing the megacorporations advertising and selling these junk foods, improving access to healthier alternatives by alleviating food deserts, and promoting a healthier lifestyle; the Indian government can and should take steps to solve this pervasive issue. Doing so would not only help rectify the impending obesity epidemic at hand, but also pave the way for future generations to make better and more informed diet choices as well as have a healthier, happier lifestyle.

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