

Sugar, Salt, Fat, and Chronic Disease Epidemic in India: Is There Need for Policy Interventions?

Cardio vascular diseases, cancer, respiratory diseases, and diabetes account for 80% of all deaths due to noncommunicable diseases (NCDs) in India.⁽¹⁾ Cardiometabolic risk factors (hypertension, overweight or obesity, type 2 diabetes, dyslipidemias, and metabolic syndromes) are prevalent in all age groups and geographic regions. Presence of risk factors varies with food consumption behavior, socioeconomic position, and built and spatial environments of individuals and communities. Prevalence of type 2 diabetes and hypertension have increased one-and-a-half- to twofold (5.9-9.1% and 17.2-29.2%, respectively) in the last 15 years, with significant urban-rural differences.^(2,3) Significantly, in the same period, prevalence of overweight and obesity increased almost four times (4-15%).⁽⁴⁾ National surveys show highly significant association (dose-response) between per capita consumption of sugar, salt, and fat, in men and women, with the occurrence of overweight and obesity. Similar but less consistent relationship was observed with occurrence of hypertension and diabetes too.⁽⁵⁾

“Salt Sugar Fat” by Michael Moss is the Pulitzer Prize winning account of these critical proximate determinants in the context of the large and organized processed food industry.⁽⁶⁾ This trifecta of the proximate determinants of the NCD epidemic has received far less attention in the Indian context. The enthusiasm and activism around the tobacco control movement is conspicuous by absence of any associated or concurrent action for salt, sugar, and fat. Per capita consumption of sugar has risen from 22 g/day in 2000 to 55.3 g/day in 2010; table salt ranged between 9 and 12 g/percapita/day; and total fat consumption increased from 21.2 g/day in 2000 to 54 g/day in 2010.^(7,8) During the same period, partially hydrogenated vegetable oil (PHVO) consumption (including palm oil) increased from 1.67 to 2.8 g/day.

Our recent analysis has shown clear linkage between the state of development and prevalence of cardiometabolic risk factors. Regional prevalence of diabetes in high and medium human development index (HDI) states was 12%, while that of low HDI states was 9%. Hypertension in high and medium HDI states was 26.5% as compared to 17.9% in low HDI states, while that of overweight/obesity was 22.7% compared with 20.8% in low HDI states. Concomitantly per capita consumption of sugar is almost twice in states with higher HDI (>0.5) as compared

to other states.⁽⁹⁾ India produces 17% of the total global sugar, while its share in export is only 4%, signifying high demand and utilization in the domestic market.⁽¹⁰⁾ Significantly up to 55% of the annual sugar production is procured by bulk purchasers for confectionaries. With per capita consumption of sugar of approximately 10 spoons per day, an average Indian eats almost 18 kg of sugar per year. In addition all of us are consuming considerable amounts of sugar in hidden forms from different processed food items: A single can of sugar sweetened beverage contains up to 40 g (10 teaspoon) of free sugars.

The 66th round of the National Sample Survey (2010) reported percapita salt consumption at 8.9 g/day; this is almost twice there commended dietary intake (RDI) of 5g per person per day.⁽⁶⁾ These estimations were based on dietary recalls on household utilization of table salt and do not count added salt in the processed foods, implying that current estimates are at best conservative and need course correction for future surveys. The annual production of edible salt in India was 6.2 million tons in 2013, a two-to two-and-a-half-fold increase over the last 2 decades.⁽¹¹⁾ Significant proportions are utilized for production of ‘value-added foods’ that are high in salt; pickles, bread products, savory snacks, ketchup, mayonnaise, and breakfast cereals.

The Directorate of Vegetable Oils, Vanaspati and Fats (DVOF) put the consumption of edible oil (including both domestic and import sources) at 19.8 million tons in 2012-2013, up from 11.8 million tons in 2004-2005. Disaggregated per capita consumption works out as follows: Total fat, 54 g/day; edible vegetable oils, 27.6 g/day; hydrogenated vegetable oils, 2.8 g/day; and trans fat, 1.64 g/day.⁽⁵⁾ The Indian edible oil market is controlled by unorganized players with most vegetable oil being purchased by industrial buyers, restaurants, and hotels for frying and baking or is sold as loose oil or vanaspati (hydrogenated oil).

The food processing industry is one of the fastest growing sectors of the Indian economy and account for consumption of 50-60% of edible sugar, salt, and fats. India’s food processing industry is the fifth largest globally; the Indian Council Agricultural Research (ICAR) forecasts a size of \$194 billion by end-2015. Food processing units (FPU) and their contribution to

India's GDP from the registered and unregistered units is increasing sharply.⁽¹²⁾ The growth of organized retail and refrigeration facilities is expected to further boost the market. The Associated Chambers of Commerce and Industry of India (ASSOCHAM) forecast a 40-60% growth in the food processing industry in the next 5 years.⁽¹³⁾

The Indian processed food market is boosted by a range of supply-side factors including favorable agroclimatic condition for a wide variety of crops, availability of water, enhancements in end-product manufacturing and packaging technologies, large livestock base (for dairy and meat processing units), and low cost of labor. So far, policy instruments have played a strong facilitator role which include: 100% tax exclusion for 5 years, followed by 25% tax-exemption for another 5 years for new companies; allowing 100% export-oriented units to sell 50% of their products in the domestic market; waiving off import duty on raw materials and capital goods for 100% export-oriented units; and exempting export from taxes and 100% Foreign Direct Investment (FDI) under the automatic route.⁽¹⁴⁾ Most of the growth was reported for confectionary, biscuits, savory snacks, chocolates, and ice creams; all have high content of sugar, salt, and fats.⁽¹⁵⁾

The Government has made several direct budgetary interventions to boost these sectors. Financial assistance of \$24.37 million was provided to 966 food processing entities in the year 2012-2013 under the up-gradation, launching, and modernization scheme. The government has already initiated plans for creating more 30 mega food parks. Growing at a compound annual growth rate (CAGR) of about 15-20%, the Indian packaging food industry (including snack foods, ready-to-eat foods, and healthy and functional foods) is likely to touch \$30 billion by 2015 from the current level of \$15 billion.⁽¹⁶⁾

Processed and packaged foods are increasingly being consumed by every household across social strata, both rural and urban. Domestic demand of processed foods, sugar sweetened beverages, and savory snacks are linked to household disposable income of middle class which is nonhomogeneous in India and a driving force for the consumer goods market.⁽¹⁷⁾ A market research study on financial independence of middle class women highlighted that purchasing power and income of urban women has doubled in the past decade.⁽¹⁸⁾ The main categories of packed food consumed are bakery products, canned/dried processed foods, frozen processed foods, meal replacement products, and condiments (like sauces). Some emerging new categories in this segment are processed dairy products, frozen ready-to-eat foods, savory snacks, processed meat, and probiotic drinks. Caloric beverages are also emerging as an additional and significant source of energy both among children and adults. Sale of packaged food is highest in northern

India (38%), followed by west (36%), south (28%), and east and northeast (21%).⁽¹³⁾

What is Needed Now?

Public health efforts to control NCDs will demonstrate meaningful impacts when mechanisms are enacted to control salt, sugar, and fat consumption. Studies highlight that even 1 g per capita reduction in salt can reduce over 7% deaths due to stroke and heart attacks.⁽¹⁹⁾ Estimations from the USA show, that 3 g reduction in salt per capita consumption would gain 194-392 million quality adjusted life years.⁽²⁰⁾ There are economic epidemiologic models from India, demonstrating that 20% tax on palm oil purchase could avert approximately 363,000 deaths from myocardial infarctions and strokes over 2014-2023.⁽²¹⁾ That will be a 1.3% reduction in cardiovascular deaths if people do not substitute other oils for reduced palm oil. High consumption of sugar at household as well as bulk purchase by industries in India could also be related to the relatively lower market price of sugar in India. Sugar is currently sold at a retail price of about Rs.35/kg (approximately half a US dollar), and among the lowest in the world.⁽²²⁾ Almost 50-60% of the total edible salt, sugar, and fat in India are used by bulk purchasers mostly from the food processing industry. To contain the obesity/overweight epidemic, experts strongly recommend reducing per capita per day consumption of foods and beverages having free sugars to be less than 10% of total daily energy intake.⁽²³⁾

So far, departments under different ministries, directly or indirectly linked to salt, sugar, and fat markets in India, have facilitated a proinvestment environment without realizing their potential public health impacts. Policy initiatives can influence consumption of salt, sugar, and fat (visible and invisible forms). Policy interventions, however, need to take a comprehensive view in order to synergize economic growth with population health. A whole-of-society approach with policy convergence between health, nutrition, agriculture, food industries, and related sectors is required.^(24,25) Businesses have to become a partner in the exercise. Some of the strategies could be mandatory product reformulation through dialogues with food producers and processors, restrictions and approvals on marketing materials contents through a nationalized regulatory agency, interventions on food supply chains and media interventions for behavioral changes, prohibiting sale of sugary drinks and eatables in or near school premises, and many others. Precise impacts of imposing additional tax on sugar sweetened beverages, salty snacks, or processed foods containing high fat content need to be studied. Experiences from several countries indicate that an additional 'excise tax' had measurable and positive effects on public health.⁽²⁶⁾ This additional

revenue generated from taxing unhealthy food items, containing excess salt, sugar, and fat can be used to support nutritional programs; having said so opposition from industry and business has to be expected.

The World Health Organization is working with network of governments (e.g., 23 countries in Europe and almost all countries in East Mediterranean region) for taking sustainable actions on salt reduction. This includes establishing salt standards for compliance by caterers, bakers, and food processors; linking government subsidies with incentives; engage national businesses and government establishments to reduce salt purchase; and public education campaigns. Several countries in Latin America, East Asia, and Europe have taken regulatory steps to limit the salt content of processed foods, culturally preferred items and through taxation. A review of policies by the World Health Organization (WHO) concluded that the most effective way to reduce trans fatty acid (TFA) consumption is to legally prohibit the sale of food products containing industrially produced TFAs. Approaches suggesting voluntary reduction of TFA by industries and producers require strong and sustainable monitoring systems. Reducing public subsidies for fast food outlets and promoting incentives for healthier products (Healthy Food Certification Program) are implemented in Mexico and the USA.

Consumption decisions are often made with imperfect information and individuals may not appreciate links between their eating habits and health consequences. Time inconsistent preferences of children and adolescents who place higher values on present satisfaction than future consequences are challenges for public health professional and require multilevel interventions.

India is home to 253 million adolescents, the highest in the world and almost 25% more than that in China. Adolescents are a gateway to NCDs and awareness among this vulnerable population to cut down salt, sugar, and fat consumption can have significant impact at the population level. While the policy framework is available, there needs to be a paradigm shift in the implementation by bringing sharper focus on adolescents using the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH) + A platform. A robust communication with the adolescents and youth to improve awareness may also facilitate in influencing the market to produce and innovate more healthy options by the industry.

Discussion, dialogue, and decisions in India on this complex but critical issue must start in true earnest immediately lest we are late in the night of this seemingly unhealthy party, fuelling the NCD epidemic to unmanageable magnitudes.

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