Editorial

Can Competitive Advantages of Markets be Leveraged for Addressing Childhood Obesity in India??

Compelling logic and science of market influence

Childhood obesity is a precursor of adulthood obesity and increased cardiometabolic risks at later ages. The prevalence of childhood obesity and overweight in India range 3.6-12% and 6-25%, respectively;[1] this translates to approximately 58 million obese and 122 million overweight children in the country. It is frightening to know that a unit percent rise in its prevalence in India will add at least another 5 million obese and overweight children below 18 years to the cardiovascular risk pool. Children who are overweight or obese at childhood are more likely to remain overweight in adulthood. Overall prevalence of overweight and obesity in India is estimated to have increased almost four times (4-15%) in the last 15 years, with significant increase in both urban and rural settings. A close relationship with overall improvement of various dimensions of development including economy can be assessed by the differences in the regional prevalence of overweight and obesity and Human Development Index (HDI): 22.7% in high-HDI states and 20.8% in low-HDI states. With studies reporting at least one cardiovascular disease risk in 70% of obese children,[2] there is a need for immediate social, political, and market-based interventions to contain this "public health catastrophe."

WHO Commission on Ending Childhood Obesity recognised that childhood obesity is a complex issue with interplay of biology, behaviour and environment having compelling logic and science; however report ended with no consensus on which interventions are likely to be effective.[3] Attention to individuals, generations, neighbourhood, media and market and society as whole was recognised. Need for convergence of health sector with various non health sectors including the urban planning, education, agriculture, trade and markets, food and nutrition, sports and recreation, and finance was accepted. Government's role and overarching responsibilities were acknowledged but accountability mechanisms for various stakeholders were not admitted. Much of the discussion on interventions seems to be polarized highlighting that there is need for national and state level prioritization.

There are ample evidence on influence of market on lifestyle and eating behaviour. Globally, processed food especially those high in sugar, salt and fat are promoted to children than any other commodity. Children are targeted as they have their own money to spend and can influence parental purchase decisions. Marketers use children as a path for forcefully indulging behavioural change among adults and families of all social classes and in society at large. This is true in case of high calorie food habits, selection of household utensils, and purchase of vehicles in family; therefore it is not exaggerating if marketers consider children as agents of life style modification.

Overweight or obese children are at high risk of several adverse health outcomes: metabolic problems, including insulin resistance; fatty liver and coronary artery diseases; higher risk of bone and joint problems; sleep apnea; and social and psychological problems, such as stigmatization and poor self-esteem.[4] Overall, obesity is known to reduce life expectancy by 7-10 years and negatively affect the quality of life. Like most other chronic diseases, childhood obesity, too, is an outcome of multiple determinants. Genetic basis alone is insufficient to explain the recent epidemic of childhood obesity. The risk factors are prevalent in all age groups and geographic regions; we focus on two commonly prevalent perceptions of eating more and exercising less, by asking: *How does competition in the market unknowingly persuade the "whole of society" and drive childhood obesity?*

Clear linkages between changing dietary patterns, lifestyle, the state of human *(read, societal)* development, and the prevalence of cardiometabolic risk factors have been established. Differential but coexisting stages of the demographic and economic transition of societies are affecting child growth by pushing children to unhealthy living and eating habits. Processed and packaged foods are increasingly being consumed by every household across social strata, in both rural and urban areas. Domestic demands for processed foods, sugar-sweetened beverages, and savory snacks are linked to the household disposable income of the middle classes, which are nonhomogeneous in India and a driving force for the consumer goods market.[5] The consumption of 'value-added foods' such as pickles, bread products,

savory snacks, ketchup, mayonnaise, and breakfast cereals is increasing in India.[6] The sale of packaged food is highest in northern India (38%), followed by the west (36%), south (28%), and east and north-east (21%).[7] The market of packaged, processed and ready-to-eat food products is increasing at an annual growth (CAGR) of about 15-20%, which is among the highest in the world.[8]

With rapidly transitioning societies, in urban as well as rural India, knowingly or unknowingly the "*rule of market*" is beginning to prevail.[9] The market is a medium of trade, where forces of demand and supply operate. It need not be a physical place of meeting, as long as it facilitates a buyer and a seller of a specific good or service to interact.[10] Presently, rule of law has become synonymous to rule of market, which in simple terms could be defined as individual freedom. By the rule of market, law would be considered as a product and leveraged to reap greater sales and consequent profits, which in turn become the judge and the driving force. Individuals make their own law and choose products on their own impulses. Governments under rule of market would allow competition. Traditionally, competition in the market is believed to improve the productivity of firms and increase social welfare; however, evidence shows that competition depends on the instruments firms use to compete.[11] Unethical use of tools to gain competitive advantages leads to undesirable societal outcomes. Laws get transformed as a platform and an institutional support for business and entrepreneurial activities.[12] In the context of childhood obesity, markets exploit technologies and techniques to insinuate their brand influence into "society as a whole" and children in particular. Companies weave strategies to get closer to their customers and capitalize on the impulsive behaviour of vulnerable children, families, and societies. These result in unhealthy diet preferences, purchasing behavior, and lifestyle "choices," contributing to devastating public health impacts such as childhood obesity and NCDs .

The Indian chocolate industry is an interesting case study for demonstrating how the market can modulate cultural and individual behaviors. The Indian chocolate industry, valued at INR 58bn in 2014 is projected to touch 122bn in 2019, at a cumulative annual growth rate (CAGR) of 15% since 2011.[13] The primary target for chocolate was children till the 1990s; thereafter, companies tried to expand their clientele.[14] Traditional Indian sweets ("mithai") are the competitors for the chocolate industry. The first attempt to woo adults was made in the second half of 1990s by using creative visual media campaigns for communication. Indian television acquired a "24×7" character at this time and the role of public broadcasters started declining (particularly in the light of the Supreme Court's judgement in 1995 that airwaves are not the monopoly of the government). Significantly, a new audience metric, Indian National Television Audience Measurement (INTAM), was instituted to help map commercial aspects. Till then, 90% of market share for chocolates had been with one company. Attracted by the sheer size of the Indian market, more competitors entered the fray and started brand-building exercises. Recent sales data show that chocolates are replacing Indian sweets ("mithai") owing to an ascending social cognisance . Most of the companies, to reduce production costs and accommodate for overhead manufacturing expenses, produce chocolates in bulk quantities. Once produced in bulk, companies and carrying and forwarding (C&F) agents strategize to further push the sales with various innovative schemes. In remote Maharashtra, a small entrepreneur spends time making novel and attractive, tiny toys, which after approval by local school children, are packed as a surprise gift with a branded chocolate.

About 50 branded variants of chocolates, owned by nine firms, are now competing on the Indian market. India's chocolate sales crossed INR 10,000 crores in 2014, a 24% increase from its previous year sales with a per capita consumption of 117 g of chocolate a year.[15] Many such push-and-pull marketing strategies are innovated to address the competition through behavior modification and manipulation. What are the public health implications of such innovations? A study on 28 of the above brands revealed that: per bar (or per packet equivalent) of chocolate has 232 kcal, 12 g of total fat, 6.3 g of saturated fat, and 25 g of sugar. Furthermore, 35% (10/28) of them were reported to have trans fats added to enhance taste and texture.[16] Thus, an average Indian is consuming 3480 kcal, 180 g of total fat, 94.5 g of saturated fats, and 375 g (75 tablespoons) of sugar from chocolate alone per year.

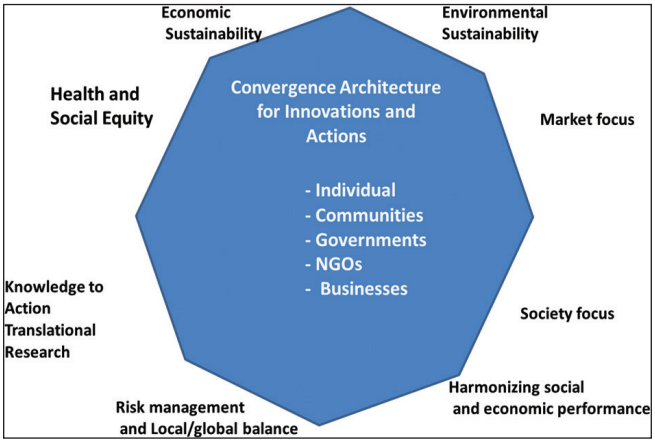

Figure 1: Concept of WoS - setting boundaries from an individual system to a societal system

These estimations were made for a 1.25-billion Indian population; specific age and income groups would obviously have higher consumption levels. Traditional Indian sweets are no less obesogenic and unhealthy. We are also not aware of the quantity of mithai-to-chocolate displacement occurring in the market in this process. Nevertheless, this example highlights how eating practices are shaped by the markets without the individuals and societies, and probably the businesses also, making obvious the adverse influences of such habit modifications.

What needs to be done now?

Childhood obesity has been interpreted as compulsive overeating under the influence of dopamine receptor mediation in the brain.[17] Children consume significantly more calories and products having invisible salt, sugar, and fat products, with taste thresholds adapted/changing with time, depending on the exposure, availability, and affordability of products on the market.[18] Without hampering India's vision for sustained economic growth and well-being, it is important to create boundaries at individual as well as societal levels using the competitive advantages of markets [Figure 1]. This is possible by integrating the capabilities and goals of different actors in society at the convergence of health and economics. To achieve convergence and maximize the benefits of market drivers, understanding and disseminating the knowledge of what drives human behavior in their individual and collective choices is also essential.

"Whole of society" (WoS) preparedness to prevent childhood obesity is one such system, adapted from diverse systems that determine the balance of support and challenges to healthy living. The unit of observation and analysis is not the child or parent in the community, but instead the aggregate levels of individual and familial exposures, and at the larger level, stakeholders from government and private sectors at municipal, regional, state, country, and global levels. Jurisdictions within each of the society systems can be preset where biopsychosocial phenotype of the children, their families, neighborhoods, and available market options are considered simultaneously. Demands for healthy foods need to be created that influence businesses to take into account society's concerns for health and adapt toward more responsible products and services. Markets need to foster competition across brands in nutritive values and healthy options in addition to taste, color, texture, and sales. For example: in New York city, food standards have been implemented through an executive order that outlines the standards of food purchased and meals and snacks served; this has been done with an overarching goal of reduction in noncommunicable diseases.[19] The standards of nutrient and food categories in each food item per serving are specified through this public notice, which includes executive orders for food vendors. The law mandates the reduction in portion size of certain foods, and specifies the serving of fruits and vegetables along with main food items.[20]

Profit is not a sin, but if it is made for inculcating healthy behaviors across the society, then it will become a bigger "virtue." The government/regulator will continue to have paramount responsibility in monitoring food quality, labeling of ingredients and safety, and the nature and content of sales strategies, including advertisements that modulate human behavior. The challenge has just started unfolding, but the future holds a promise to end childhood obesity when partners and sectors can converge within the constraints of a poverty-prosperity mix.

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