

A Short Review on the Impact of Junk and Processed Foods on Childhood Obesity

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Abstract

A severe public health crisis raises morbidity, mortality and considerable, prolonged social and economic expense is childhood obesity. In the last quarter of the century, the levels of obesity in American children and youth nearly tripled. Nearly 20% of young people are overweight, with obesity rates rising alarmingly in pre-school children. A survey conducted by the Centre for Disease Control and Prevention reported the incidence of obesity in children from 2-5 years and 6-11 years have been doubled from 5-12% and 7%-17% respectively. Childhood obesity puts children as well as adults at an increased risk for developing destitute health including diabetes and cardiovascular complications. To overcome this, preventive measures should emphasize reducing overweight should be implemented. In various contexts, steps to combat childhood obesity must be taken and a multiplicity of interventions implemented and include a broad number of participants. Continual action is needed at multiple levels – individually to impact behavioural change at schools and communities, and sectoral change at the agriculture, food production, training, transport, and urban planning level.

Index Terms

Childhood, Foods, Junk, Obesity.

INTRODUCTION

Consumption of processed food and sugar-rich beverages has increased worldwide. In nineteen European countries including Italy, Germany, and the United Kingdom, data showed increased household accessibility of ultra-processed foods of 13.4%, 46.2%, 50.4% respectively[1]. The frequency of junk food consumption recorded 51.3 percent in a multi-country study of approximately seventy-two thousand children aged between 6-7 years in seventeen countries and nearly 199, 135 teenagers between 13-14 years old in thirty-six countries. In children, the intake was very often with a frequency rate of 22.6% (1-2% weekly) and 4.2% of three days per week; and in teenagers with a frequency rate of 38.7% and 12.6% reported. Merely 29.4% of respondents in an analysis from the United States registered consuming junk food less than one time a week. Several surveys result also indicated increased intake (36.4%) of fast food in children[2].

DELETERIOUS IMPACTS OF JUNK FOODS

Frequent junk food intakes lead to health issues such as obesity, emotional problems and self-esteem issues, and later chronic diseases. An additional 160 and 310 kilocalories could contribute to the daily consumption of calories for teens and children with a single fast food[3]. The paucity of vitamins like A and C as well as minerals like magnesium and calcium promotes malnutrition and osteoporosis and even dental problems owing to increased intake of sugar. In numerous junk and processed food product, the existence of harmful food colorants and harmful trans fats in food further

complicates the problem[4]. Currently, almost one in four children and teenagers is overweight in developing countries. These additional pounds place children at risk for serious health complications. Obesity in children also has an emotional influence. Obese children also find it difficult to keep up and enter sports and events with other children. Other children will tease and ignore them, resulting in depression, lack of confidence, negative views of the body, and even conceit[5].

CAUSES OF WEIGHT PROBLEMS AND OBESITY

The initial step in breaking the cycle is to realize how kids become overweight. Mostly, child obesity is instigated by too much food intake and very little or lack of exercise. Children require adequate food to promote growth[6]. However, if they eat extra calories than they expended during the day, weight gain is the result. A major problem for the mid-and secondary school students was the supply of junk and fast food. However, as there are so many laws and regulations in primary schools on junk food, children are scarcely able to access junk food. Nonetheless, the consequence of obesity could be increased if junk foods were more accessible to school children[7]. School children who lived nearer to fast food places had less fruit or vegetable serving but devoured more soda and had a higher chance of becoming obese. The authors found that child obesity rates are directly linked to the number of times eating fast food. With increased consumption of fast food, the risk of overweight was higher[8]. It is well recognized that a balanced diet can help preserve a healthy weight. Eradicating sugar-rich beverages and snacks will lead to decreased calorie intake and reduce the possibility of obesity in children. Numerous studies

indicate that dietary mediations and physical activity with the help of schools and other programs may lessen the risk of obesity in children. Calorie-dense junk food and snacks are accessible at various locations. Eating processed foods has become very common nowadays, nearly 75% of school children between grade 7 and 12 were eating processed and junk food in a week[9].

The fast-food sector is also responsible for the increasing rates of obesity in children[10]. Fast food restaurants also sell kids' toys that aim to make children more appealing. It has been reported that nearly 40% of kids urged their parents to take them to restaurants on a regular basis[11]. Furthermore, a research survey revealed that out of 3000 variations made from common children's menu in fast food eateries, just 13 meet the minimum dietary regulations and recommendations for children[12]. Several studies found a link between junk, processed food intake, and obesity, involving a study that discovered fast food restaurants close to schools raise the possibility of obesity amongst school children. According to a survey conducted by International Task Force for Obesity in 2004, more than 30 million children were identified as obese, and 155 million children were identified as overweight worldwide[13]. Processed, junk foods, and decreased physical activity are the key explanations for the growing weight of children.

LITERATURE SURVEY RELATED TO CHILDHOOD OBESITY

The rise of obesity rates in the population has been observed in developed and emerging economies. The International Obesity Task Force has been formed to examine the repercussions on obesity which has become a matter of great concern worldwide. The percentage of overweight has been increasing from 16% to 28% from the year 2004-2006[14]. Obesity-related healthcare costs have risen from approximately forty-seven million in the year 2002 to one-twenty-seven million in 2008. Another survey analysis on childhood obesity revealed that obesity in children between six to ten years was 6.5% in 1980 to 19.6% in 2008[15]. It indicates the obesity in children has increased 3 times as much as thirty years before.

Obesity is described as one of the greatest public health issues of today by the World Health Organisation (WHO). In developing countries and countries experiencing economic change, it is also increasingly identified as a major issue. The issue of obesity is not limited to adults but is also recorded in children and youth. This pattern is of significant concern, considering the effects of adolescent obesity, which comprise increased cardiovascular and hypertension disorders, diabetes, disruptive sleep apnoea, oesophageal reflux and gastric disorders, osteoarthritis, emotional disturbances, social alienation, and self-esteem[16].

Junk foods are categorized as foods that are high in salt, sugar, and fat with a small amount to no protein, vitamin, mineral, and other essential micronutrients, and trace elements. The term fast food and junk food have also been

used interchangeably and are classified as food products such as soft drinks, ice creams, pastry items, confectionaries, candies, sugar-rich, and fried food. The Nutrition Transformation in India is exemplified by the growing consumption of junk and processed foods bought and consumed. Food products that are rich in sugars and fats are inherently addictive and draw children over nutritious foods[17]. Fast availability, savour, cost-effectiveness, promotion approaches, and cohort pressures make junk foods popular among children[18]. Therefore, due to easy accessibility and increased income of the family, the increased frequency of fast-food consumption in urban and rural areas has been noticed.

CONSUMPTION OF FAST-FOOD AND SUGAR-RICH FOODS AMONG INDIAN CHILDREN

There has been a rising trend in Indian children over the last twenty years in the intake of fast foods and sweetened sugar beverages[19]. The most important factors in the high consumption of these items are due to its easy accessibility, convenience, tastiness, working parents, attractive items, captivating ads, low cost, and effective marketing strategies. Consumption of sweetened beverages and fast food is rising at an average rate of 40% annually. The beverage manufacturers have recorded similar booms. A survey of nearly thirteen thousand children of 9-14 years of age by the Science and Environment Centre has shown that 93 percent consume processed packed food and 68% preferred to have sugar-rich beverages very often in one week [20]. Approximately 53% of children enrolled in the study consumed these items at least one time a day. Fast-food that are high in fat, salted, or sugar like the burger, French fries, and pizza are consumed more often in a week by nearly one-fourth of school children.

ADVERSE EFFECTS OF REGULAR CONSUMPTION OF JUNK FOODS AND SWEETENED BEVERAGES

Obesity and its related impediments such as dental caries, hypersensitivities, infection because of microbial contamination, and the cancer risk from carcinogenic and hazardous properties of certain food additives are the key adverse outcomes of the ingestion of sweetened beverages and processed and junk foods[21]. According to the 2015-16 National Family Health Survey, India has doubled with the number of overweight children and adolescents over the past ten years. The high-level of caffeine in confectionaries contributes to neurological and psychological and cardiac dysrhythmias[22]. Energy beverages are also reported to have harmful effects due to the presence of caffeine. Recommendations and guidelines on the intake of foodstuffs and beverages, which can increase children's problems, should be established to resolve the conundrum of obesity, and associated non-communicable diseases. Many countries have provided global guidelines for intakes in children and adolescents of processed foods, sugar-rich beverages, and caffeine-rich energy drinks. This exercise was carried out to

formulate a recommendation on the intake of junk food, canned fruit juices, and energy drinks in children and young people in India by the Paediatric and Adolescent Nutrition Society[23].

STRATEGIES TO REDUCE CONSUMPTION OF JUNK FOODS

Prohibiting the sale of junk foods is seen as an effective interference to reduce its intake in and around schools. Regular school meal intake had a positive impact on food habits that encourage a healthy diet. Michelle Obama started "Move Salad Bars to School" in 2010 as part of the 'Let's move,' effort to increase awareness about the consumption of salad bars in school to enhance the nourishment of children. Slusser and his team surveyed three elementary schools in Los Angeles. The authors reported that after the salad bar introduction, there was a substantial rise in the consumption of fruits and vegetables with a significant reduction in the intake of cholesterol, saturated fat, and total fat. This study also revealed that substituting sugar-rich beverages with drinking water lessens the intake of sweetened beverages that ultimately resulted in the reduced BMI[24]. Junk food advertising precedes unsafe food preferences leading to overweight in children. Approximately 85% of school children in Delhi school reported TV being the biggest source of junk food marketing and promotion followed by magazines, the internet, and billboards near the school area with 78.5%, 29.5%, and 22% respectively[25]. The outcome of this study reported that 88.7% of school children were yearning to consume junk food and sweetened beverages. There is ample evidence that fast food and non-alcoholic drink commercials on television, newspapers, and online platforms have an impact and adverse effect on BMI. The decision of children to buy the advertised items is promoted by children's marketing campaign, promotion with celebrities and premiums such as free toys[26].

CONCLUSION

The multi-sectoral dietary intervention has shown promising results in the alteration of obesity-related food risk factors for children with increased body mass index (BMI). Excellent outcomes from several meta-analyses indicate a decline in the consumption of sugar-rich beverages, reduced intake of fat-rich diets, and snacks and increased consumption of nutritious food have effectively contributed to the promotion of health. Providing a plethora of vegetables, fruits, whole grain products and consumption of non-fat milk and dairy products, lentils, proteins, choosing lean meats and fish, limiting sweetened beverages, sugar-rich foods, and saturated fat, drinking plenty of water will help children developing balanced eating and maintaining a healthy body.

REFERENCES

[1] Statista. United States: How often do you eat fast food (any quick service restaurant) in any given week (on average)?

- Available from: <https://www.statista.com/statistics/561297/us-average-fastfood-consumption-per-week/>. Accessed January 16, 2019.
- [2] Vandevijvere S, De Ridder K, Fiolet T, Bel S, Tafforeau J. Consumption of ultraprocessed food products and diet quality among children, adolescents and adults in Belgium. *Eur J Nutr*. 2018. <https://doi.org/10.1007/s00394-018-1870-3>
- [3] Bowman SA, Gortmaker SL, Ebbeling CB, Pereira MA, Ludwig DS. Effects of fast-food consumption on energy intake and diet quality among children in a national household survey. *Pediatrics*. 2004 Jan;113(1 Pt 1):112-8.
- [4] Sheetal, A., Hiremath, V. K., Patil, A. G., Sajjansetty, S., & Kumar, S. R. (2013). Malnutrition and its oral outcome - a review. *Journal of clinical and diagnostic research: JCDR*, 7(1), 178–180.
- [5] Cote AT, Harris KC, Panagiotopoulos C, et al. Childhood obesity and cardiovascular dysfunction. *J Am Coll Cardiol*. 2013;62(15):1309–1319.
- [6] Africa JA, Newton KP, Schwimmer JB. Lifestyle interventions including nutrition, exercise, and supplements for non-alcoholic fatty liver disease in children. *Dig Dis Sci*. 2016;61(5):1375–1386.
- [7] Ashlesha Datar and Nancy Nicosia. Junk Food in Schools and Childhood Obesity. *Journal of policy analysis and management*. 2012, 31(2), 312-337.
- [8] Davis B, Carpenter C. Proximity of fast-food restaurants to schools and adolescent obesity. *Am J Public Health*. 2009 Mar;99(3):505-10.
- [9] Anderson PM, Butcher KM. Reading, Writing, and Refreshments: Are School Finances Contributing to Children's Obesity? *Journal of Human Resources*. 2006;41(3):467–494.
- [10] Almuhanha, Monira Abdulrahman et al. "Fast food intake and prevalence of obesity in school children in Riyadh City." *Sudanese journal of paediatrics* vol. 14,1 (2014): 71-80.
- [11] Ritchie L.D., King J.C. (2008) Nutrient Recommendations and Dietary Guidelines for Pregnant Women. In: Lammie-Keefe C.J., Couch S.C., Philipson E.H. (eds) *Handbook of Nutrition and Pregnancy*. Nutrition and Health. Humana Press. https://doi.org/10.1007/978-1-59745-112-3_1.
- [12] Wang, Youfa, and Hyunjung Lim. "The global childhood obesity epidemic and the association between socio-economic status and childhood obesity." *International review of psychiatry (Abingdon, England)* vol. 24,3 (2012): 176-88.
- [13] Hurt, Ryan T et al. "The obesity epidemic: challenges, health initiatives, and implications for gastroenterologists." *Gastroenterology & hepatology* vol. 6,12 (2010): 780-92.
- [14] Karnik, Sameera, and Amar Kanekar. "Childhood obesity: a global public health crisis." *International journal of preventive medicine* vol. 3,1 (2012): 1-7.
- [15] Sahoo K, Sahoo B, Choudhury AK, Sofi NY, Kumar R, Bhadoria AS. Childhood obesity: causes and consequences. *J Family Med Prim Care*. 2015;4(2):187-192.
- [16] Working Group Members on Matters related to Junk foods and Addressing Problem of Obesity in India in 2015. Report of Working Group on Addressing Consumption of Foods High in Fat, Salt and Sugar (HFSS) and Promotion of Healthy Snacks in Schools of India. Available from: <http://nipccd.nic.in/reports/hfss.pdf>.
- [17] Angela Jacques, Nicholas Chaaya, Kate Beecher, Syed Aoun Ali, Arnauld Belmer, Selena Bartlett. The impact of sugar consumption on stress driven, emotional and addictive behaviors. *Neuroscience & Biobehavioural Reviews*, 2019, Volume 103, 178-199.

- [18] Kaushik JS, Narang M, Parakh A. Fast food consumption in children. *Indian Pediatr.* 2011;48:95- 101.
- [19] Gupta A, Kapil U, Singh G. Consumption of junk foods by school-aged children in rural Himachal Pradesh, India. *Indian J Public Health.* 2018;62:65-7
- [20] Bhushan C, Taneja S, Khurana A. Burden of Packaged Food on Schoolchildren: Based on the CSE survey 'Know Your Diet' 2017. Centre for Science and Environment, New Delhi. Available from: <http://www.indiaenvironmentportal.org.in/files/file/Burden%20of%20Packaged%20Food%20on%20School%20Children.pdf>.
- [21] Keshari P, Mishra CP. Growing menace of fast food consumption in India: Time to act. *Int J Comm Med and Public Health.* 2016;3:1355-62.
- [22] International Institute for Population Sciences (IIPS) and ICF. 2017. National Family Health Survey (NFHS-4), 2015-16: India. Mumbai: IIPS.
- [23] Wikoff D, Welsh BT, Henderson R, Brorby GP, Britt J, Myers E, et al. Systematic review of the potential adverse effects of caffeine consumption in healthy adults, pregnant women, adolescents, and children. *Food Chemical Toxicol.* 2017; 109:585-648.
- [24] Slusser WM, Cumberland WG, Browdy BL, Lange L, Neumann C. A school salad bar increases frequency of fruit and vegetable consumption among children living in low-income households. *Public Health Nutr.* 2007;10:1490-6.
- [25] Centre for Consumer Studies, Indian Institute of Public Administration. Mishra S, Pathania M. Evaluation of the effect of Junk food on the health of schoolchildren of Delhi. Available From: <http://www.consumereducation.in/ResearchStudyReports/Junk Food 2016.pdf>.
- [26] Vargas-Garcia EJ, Evans CEL, Prestwich A, Sykes-Muskett BJ, Hooson J, Cade JE. Interventions to reduce consumption of sugar sweetened beverages or increase water intake: evidence from a systematic review and meta-analysis. *Obes Rev.* 2017; 18:1350-63