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Junk Food and Human Health: A Synoptic Review

Nilima Y. Bhoge
Department of Food Science,
Arts Science and Commerce College Chikhaldara, (Maharashtra), INDIA

(Corresponding author: Nilima Y. Bhoge)
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ABSTRACT: Drastic changes have been observed among the people in the recent years with reference to selection of different food items. On the other hand, various diseases were reported among the people all over the world and the obvious reasons were the consumption of junk foods. The worst victims were the children who prefer junk foods available at the market. Diet cognisant people are now getting the message that wise dietary fat choices offer essential fatty acids, blood lipid management, maintained endocrine and immune function, inflammation control, metabolic effects and even potential body composition and performance benefits. This has compelled certain companies to sell foods that are recognized by health authorities. The present review aims to strengthen our knowledge regarding the use of Junk food and its possible health impacts. Practical suggestions for incorporating healthy fats will be made.

Keywords: Junk Food, Health, Selection, Balanced Diet

I. INTRODUCTION

Junk food is a depreciatory phrase for inexpensive food with high levels of calories from sugar or fat with little fiber, protein, vitamins or minerals (O'Neill and Brendon, 2010). The term dates back at least to the early 1950s, (Zimmer and Ben 2010) although it has been reported that it was coined in 1972 by Michael F. Jacobson of the Center for Science in the Public Interest. The high protein food such as meat prepared with saturated fat, many hamburger outlets, fried chicken outlets and the like supply food considered as junk food. With the advent of Hostess Twinkies and Fritos corn chips, McDonalds and KFC, junk food has become more and more popular among the people. Although, researchers reported health impacts caused by junk foods, few believe that such foods usually do not cause any immediate health apprehension, when incorporated with a well balanced diet (Magee, Elaine 2007). However, the utilization of a "junk food"-heavy diet, may cause obesity that has resulted in public health consciousness movements, and ban on advertising of such commodities (WHO, 2015).

Attempts have been made to change the eating habits of people from less desirable to more desirable types of food. Three Community Study using mass media and community education showed that diets could be somewhat modified through community-wide health promotion efforts (Maccoby, *et al* 1977). Dubbert, *et al* 1984; Mayer, *et al,* 1986 indicated that smaller scale interventions using a variety of labelling and prompting strategies have been successful in increasing the sale of low calorie and low fat items in cafeterias and increasing the sales of salads, a low-fat, high-fiber menu selection (Wagner & Winett, 1988) at a fast-food restaurant.

Eating a healthy diet is a tedious job for children and people who are busy. The only way to evade junk food is to encourage eating healthy diet and more of the foods that are low in fat, saturated fat, and cholesterol high fiber foods, including whole-grain foods, vegetables and fruits and foods that have only a moderate amount of sugar and salt calcium rich foods, to meet daily calcium requirements. Iron rich foods must be included to meet daily requirements for iron. The excess fat, carbohydrates, and processed sugar present in junk food expose people to an increased risk of obesity, cardiovascular disease, weight gain, diabetes, and many other chronic health conditions. The consumption of healthy foods like fruit, vegetables or dairy products has been found to be very less in people who eat too much junk food in single sitting and to gratify their hunger. Junk food consumption modify brain activity in a manner comparable to addictive drugs like cocaine and heroin revealed by Scripps Research Institute study in 2008. The pleasure centers of rat brains became desensitized, requiring more food for pleasure; after the junk food was taken away and replaced with a healthy diet (Johnson, *et al* 2010).). The likelihood of unhealthy eating habits during pregnancy increased in the offspring's of rats has been also observed. Modern diet relates to 'Junk food' that simply means an empty calorie food. An empty calorie food is a high calorie or calorie rich food which lacks in micronutrients such as carbohydrates, proteins, vitamins, minerals, or amino acids, and fiber but has high energy (calories).

These foods does not contain the nutrients that your body needs to stay healthy. Hence, this food that has poor dietetic values is considered unhealthy and may be called as junk food [11]. Junk food is an informal term applied to some foods which are perceived to have little or no nutritional value, but which also have ingredients considered unhealthy when eaten regularly, or to those considered unhealthy to consume at all. Hence, an attempt has been made to review and understand the possible health impacts of junk food.

II. JUNK FOODS AND POSSIBLE HEALTH CONCERNS

Today's world has been adapted to a system of consumption of foods which has several adverse effects on human health. Lifestyle changes has constrained us so much that one has so little time to really think what we are eating is a healthy diet. Globalization has seriously affected one's eating habits and enforced many people to consume fancy and high calorie fast foods, popularly known as Junk foods. Research into the possible health hazards on consumption of such high calorie foods has given an insight to avoid them, but unfortunately measures taken are not as effective as they need to be. Ailments like Obesity, food poisoning, dehydration, cardiac problems diabetes mellitus, and arthritis have seen a profound rise in developing countries and such unhealthy junk food, processed food, high fat calorie consumption are the notable factors to its contribution. Fast food is coupled with low nutritional value, the high fat, calorie and sodium content of the foods can lead to a variety of health problems. The over consumption of junk foods may cause weight gain, obesity, diabetes, cardiovascular conditions among the people.

Table 1: Some junk foods and health effects.

S No	Foods	Diseases	websites
1	Trans foods e.g., Doughnuts, and baked goods including cakes, pie crusts, biscuits, frozen pizza, cookies, crackers, and stick margarines	Trans fats raise your bad (LDL) cholesterol levels and lower your good (HDL) cholesterol levels. Eating trans fats increases your risk of developing heart disease and stroke. It's also associated with a higher risk of developing type 2 diabetes.	1
2	Fast Foods	risk for kidney stones, kidney disease, and stomach cancer. risk of asthma and rhinitis, depression.	2
3	Packaged Cookies	change in weight (loss and gain), loss of appetite, occasional nausea, dizziness, vomiting and confusion, acidic blood condition	3
4	Cake Frosting	nausea, bloating, blood sugar spike diabetes, heart disease, obesity, tooth decay, cavities, liver dysfunction, infertility (in women), cancer, stroke	4
5	Colas and Sodas	Kidney Failures Metabolism Level Decreases Obesity and Diabetes, Teeth and Bone Damage, Reproduction problems	5
6	Fried Foods	clog arteries and lead to strokes and Alzeimer's, Clogged veins and arteries cause heart attacks and aneurysms. emphysema and respiratory distress	6
7	High fructose foods	promoting obesity, disease, and death	7

III DRIVERS OF FAST FOOD CONSUMPTION

Fast Food consumption is variably affected by a whole range of factors including food availability, food accessibility and food choice, which in turn may be influenced by geography, demography, disposable income, urbanization, globalization, marketing, religion, culture and consumer attitudes. Some of these drivers that are specifically related to the nutrition transition are discussed below.

(a) Income

Increased incomes or lower prices have lead to the increased consumption of processed foods. While those that are well educated can choose to adopt a healthy lifestyle, the poor have fewer food choices and more limited access to nutritional education.

(b) Urbanization

Urbanization has various results that it leads to new and improved marketing, distribution infrastructure, attracts large supermarkets dominated by multinational corporations, and results in better transportation systems thereby improving access to fast food. This ultimately facilitates and results in the globalization of food consumption patterns.

(c) Trade liberalization

Availability of processed food has risen in India after foreign direct investment by multinational food companies. Thus, changes in trade policies have facilitated the rising availability and consumption of fast food in India. These policies of trade liberalization therefore have implications for health by virtue of being a factor contributing to the 'nutrition transition' that is associated with rising rates of obesity and chronic diseases such as cardiovascular disease and cancer (Thow & Hawkes 2009).

(d) Franchises and manufacturers

KFC, McDonalds, Kraft and Nestlé are all drivers of the fast-food market, processed foods and Western lifestyle that have become so widespread in developing countries (Hawkes 2005). Due to globalization of food systems, traditional diets in developing countries are being transformed as more meals are now available in the fast-food calorie-rich pattern of developed countries, and these are increasingly abundant and cheap through advances in food processing and modern technology.

(e) Retailing

Supermarkets along with large-scale food manufacturers have profoundly transformed fast food industry in our country. This rapid growth was only possible because supermarkets expanded beyond their original markets, moving into small and poor countries, from urban to rural areas. The fast food consumption has a strong impact due to retailing.

(g) Consumer attitudes and behaviour

Consumer health awareness continues to grow with the increasing availability of health information going hand in hand with the ageing of populations and increased risk for lifestyle diseases. Selection of foods that are acceptable to an individual increasingly takes place in a context where availability is substantially influenced by the food industry and food retailers.

IV. MANAGEMENT OF JUNK FOOD CONSUMPTION

A multiple baseline approach examined the effects of two procedures on the snack selection behavior of 25 third grade children. In children who were selected non-nutritious rather than nutritious snacks for more than 40% of the baseline observations, nutrition education alone had little or no impact on their selection of snacks. However, with the implementation of correspondence training, in which a reward was made contingent upon carrying out a stated intent to choose a nutritious snack, the children consistently chose nutritious snacks (Friedman *et al*. 1990).

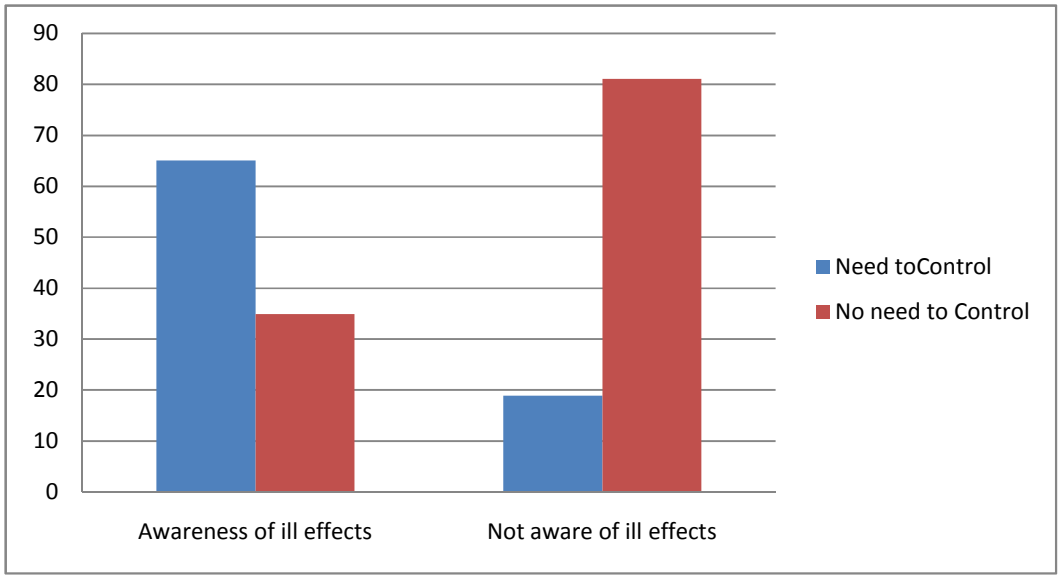
In this quasi-experimental study by Matvienko, 2007 students at 2 intervention schools participated in a 4-week after-school program, NutriActive Healthy Experience, that included nutrition lessons, healthy snacks, and parent education. The intervention group showed a 25.7% improvement in choosing more healthful snacks, and the comparison group showed an 18.2% decline. At 4 months, the intervention group's score was 33.3% higher than baseline and the comparison group's score remained 18.2% lower than baseline (time by treatment interaction, P= .023). Intervention students were significantly more likely than comparison students to choose more healthful snacks when given the opportunity. The snack test may be a useful alternative for assessing snack choices of children ages six to seven years.

It is further advocated that research should investigate the optimal duration of a nutrition education program in a child care setting and other external influences most influential on snack choice and eventual obesity risk.

Braun *et al*., 2014 described Children's Healthy Living (CHL) Program can be used the ANGELO (Analysis Grid for Environments/Elements Linked to Obesity) model to design a regional intervention to increase fruit and vegetable intake, water consumption, physical activity, and sleep duration and decrease recreational screen time and sugar-sweetened beverage consumption in young children ages 2-8 years. The stressed that engaging community to identify preferred intervention strategies by formulating the regional intervention. Community results were combined with the effective obesity-reducing strategies identified in the literature, resulting in a regional intervention with four cross-cutting functions: (1) initiate or strengthen school wellness policies; (2) partner and advocate for environmental change; (3) promote CHL messages; and (4) train trainers to promote CHL behavioral objectives for children ages 2-8 years. These broad functions guided intervention activities and allowed communities to tailor activities to maximize intervention fit. Habit of eating fast food can damage the body of people in several ways. By making smarter choices people can restrict the health risks associated with eating fast foods.

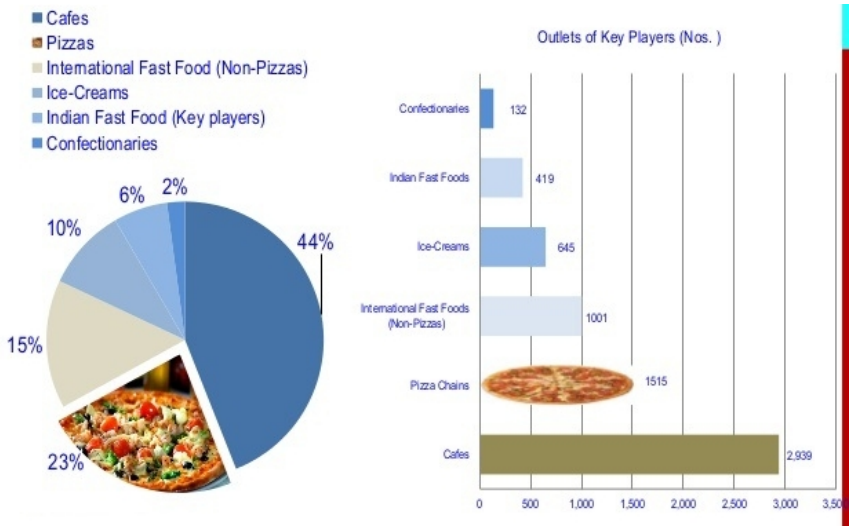
However, increasing fruit/vegetable consumption, water intake, physical activity and sleep; and decreasing screen time and intake of sugar sweetened beverages may be useful in reducing the burden of children (Fialkowski *et al.,* 2014). Community-identified priorities centered on policy development; role modeling; enhancing access to healthy food, clean water, and physical activity venues; and healthy living education are the other factors that may be useful in this regard.

It is obvious that fast foods are always a temptation because they are widely available, easy available and cheap. Parents and educators can be more involved in increasing awareness regarding the negative effects of fast foods and discourage children from consuming them. Since many food patterns start during early childhood, parents and teachers should avoid using fast foods as rewarding meals and attempt to educate children on healthy food choices. Encouraging the consumption of a balanced diet, high in complex carbohydrates such as legumes, fruits, vegetables, and whole grains may result in many health benefits. In addition, promoting a diet rich in calcium, which is found in dairy sources such as low-fat milk and cheese or in other sources such as broccoli or kale promotes peak bone mass and decreased risk for osteoporosis and bone fractures later in life. In general, a diet low in fat, especially saturated fat, low in salt and high in fiber and calcium can prevent obesity and disease. Advocating nutrient dense diets, rich in whole grains, fresh fruits, and vegetables and increased physical activity may serve as the greatest investment of society, the health of our youth. The perception among people with regard to fast food in India is shown in fig. 1 and frequency of outlets of key players in fast food is shown in Fig. 2.



Source: Nitin *et al.*, 2015

Fig. 1. Association between awareness of ill effects of fast food consumption.



Source: opportunities in Indian food service market

Fig. 2. Frequencies of the outlets of key players in India.

IV. CONCLUSION

Different opinions among scientific community and the general public over recent years, dietary fats remain a potent regulator of physiological function. Food sources remain the preferred method of intake in most situations. Education and awareness among general public will help in achieving the goals. The ban on advertisement that promote junk foods may also prove fruitful in this direction. Nutrition, especially sensing and absorption of energy substances, not only plays an important role in the intensity of life activities and storage of energy substances but also controls aging and lifespan. More activity and rapid growth result in shorter life expectancy, and less activity and slower growth result in longer life expectancy and the consumption of junk foods will increase the burden. Nutrition science constantly evolves, and future research will better elucidate the independent and combined roles of modifiable factors such as physical activity and nutrition on human health. Health experts can play a key role in optimizing modern diet and human health across the life cycle, particularly during growth and old age.

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