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Health Hazards and Knowledge about Junk Foods-A Review

Vaishali Krishna Pawar
Department of Community Health Nursing, Aurangabad Nursing College, Aurangabad (MS), India

Abstract

In consumer societies, modern diets based on unhealthy fast foods, convenience foods, energy dense snacks, and soft drinks, the abundance and omnipresence of food, and sedentary lifestyles and electronic recreation that minimizes physical activity have led to serious weight control problems. A particularly severe trend impacting future health levels are the high, and in most countries still rising, levels of overweight and obesity in infants and children. Junk food tastes good, but the effects on the health is detrimental. Junk foods have become a prominent feature of the diet of youngsters, especially in the developing country. The health problems that stem from overweight and obesity can shorten the life span. Future medical practitioners should know that these kinds of eating habits will create nutritional deficiencies along with weight gain which ultimately ends in metabolic syndrome. In this review, we will discuss health hazards of junk food and knowledge and opinions of the adolescents.

Keywords: Health Hazards, Junk Foods, unhealthy fast foods.

***Corresponding author:** Vaishali Krishna Pawar Department of Community Health Nursing, Aurangabad Nursing College, Aurangabad (MS), India Email: vaishalipawar147@gmail.com

1. Introduction

Consumption of fast foods has become almost a global phenomenon. India's fast-food industry is expanding at the rate of 40% every year. India ranks 10th in the fast food per capita spending figures with 2.1% of expenditure in annual total spending [1].

Popularity of these food stuffs in this age of urbanization has been attributed to quick preparation and convenience of finishing a meal within no time. Great taste, attractive appearance along with advertising has played a major role in attracting people particularly adolescents to the selling joints [2-4]. Unfortunately, the current world's adaptation to a system of consumption of fast foods has resulted in several adverse effects on health. The energy density of fast foods had been found to be more than twice the recommended daily allowance for children [5]. Experts therefore attribute the current childhood obesity epidemic to fast foods [1]. This increase in childhood obesity has led to increase in life-threatening conditions particularly non communicable diseases in developing countries [1,6]. Dental cavities another common ailment in school children can result due to dense sugar content in fast foods [7]. Food additives used in these food stuffs are found to be carcinogenic and can be allergic causing asthma and rashes which are also seen frequently among children [1]. Added to this in developing countries there are problems like poor hygiene during preparation storage and handling of fast foods leading to contamination by microorganisms [8].

As food habits learnt in childhood tend to persist into adulthood, it becomes important

to educate children about healthy eating habits and make them aware about the health hazards of fast foods right from school level onwards. It becomes equally important to have a clear understanding of the factors influencing food choices so as to formulate appropriate nutritional educational strategies. According to a survey, 81% of children and teen age youth influence where the family goes for the fast foods, 55% influence the choice of restaurants for dinner and 50% influence the type of food the family eats at home (Herald of Health Nov 2002) [9].

Eating frequent fast food meals causes teens and young adults to gain more weight and face an increased risk of developing insulin resistance according to the results of a study funded by the National Heart, Lung, and Blood Institute (NHLBI) and published in the January 1, 2005 issue of The Lancet [10].

An article on food and disease showed that drinks that contain phosphorus (especially colas) could lower the level of calcium in the blood causing osteoporosis. Soda pop adds unnecessary, non-nutritious calories to the diet leads to overweight. Obesity increases the risk of diabetes and cardiovascular diseases and cause severe social and psychological problems. There was a direct relationship between phosphoric acid present in cola beverages and development of kidney stones. Caffeine present in soft drinks can cause nervousness, irritability, sleeplessness and headache. Several additives used in soft drinks cause occasional allergic reactions. High sugar diets may contribute to heart disease in people who are insulin resistant. Artificial sweeteners like saccharine and aspartame has been linked with urinary bladder cancer [11].

With a number of studies, researchers have established that when eating junk food, a simultaneous increase in the amount of substances that promote inflammation in the blood occurs, lasting about 3-4 hours. Inflammatory processes in the vessel walls are what lead to atherosclerosis [12].

By means of a series of blood samples taken before and after eating the sandwich, a dramatic increase was observed in the amount of free radicals and substances promoting inflammation in the blood; at the same time, the amount of anti-inflammatory substances was reduced. The study also showed that the content of sugar and fat in the blood inhibits the ability of the vessels to dilate and contract concurrently with the changing need for more or less blood to vital organs. This could also lead to blood pressure problems.

Another recent study from Oxford University suggests that in the UK, 80 percent of men and almost 70 percent of women out of the total population will be overweight or obese by 2020. Since many weight problems can be traced to eating large amounts of junk and processed foods, that's a whole lot of pleasure desensitization and brain deterioration going on, and it might add up to a whole bunch of depressed people. At least now more people will better understand one of the primary causes of feeling blue and unsatisfied in their lives - and can change their behavior accordingly [13].

In an article “Fast food, unfriendly and unhealthy” was published in the International Journal of Obesity, suggested that, the food quality and portion size need to be improved before it is safe to eat frequently at most fast food chains [14].

Dr Lucy Pickavance, from the University’s Institute of Ageing and Chronic Disease, explained that body weight is influenced by many factors, and some of the most important of these are the nutrients we consume. Excessive intake of certain macronutrients, the refined sugars and saturated fats found in junk food, can lead to weight gain, disrupt metabolism and even affect mental processing.

Literature related to health hazards of junk food

A descriptive study conducted by WHO regarding fast-food and obesity founded that 1.6 billion adults (above15 year) were overweight; at least 400 million adults were obese. WHO further projects that by 2015, 2.3 billion adults will be overweight and more

than 700 million will be obese [15].

A double blind cross over study was conducted to determine that caffeine plays as integral role in the flavor profile of soft drinks, by examining the effect of caffeine. Study was conducted in an academic research center in USA with 25 adolescents, regular consumers of colas soft drinks. The finding showed that only 8% of a group of regular cola soft drink consumers could detect the effect of the caffeine concentration in various soft drinks. The findings showed that only 8% of a group of regular cola soft drink consumers could detect the effect of the caffeine concentration in various soft drinks. It was also found that higher the rate of consumption of caffeinated soft drinks more likely reflect the mood-altering and physical dependence-producing effect as a central nervous system active drug [16].

A cross sectional study found out association between fast food restaurant use and food choices among adolescents in Minnesota. A community based sample of 4746 adolescents of grade 7-12 was selected. Among them 50.2 percent were males and 49.8 percent were females and mean age was 14.9 years. Their dietary intake was assessed by using semi quantitative food frequency questionnaire. The result indicates that 75 percent of the students reported eating at a fast food restaurant during a past week. The most consumed junk food by females were, soft drink 45 percent, cheeseburger 100 percent , French fries 60 percent and by males, soft drink 42 percent, cheeseburger 73 percent, French fries 53 percent [17].

A cross sectional observation examined the relationship between carbonated soft drink consumption and bone mineral density among adolescents in Ireland. A sample of 1335 adolescents aged between 12-15 was selected. Among them 591 were boys and 744 were girls. Their beverage consumption was assessed by the dietary history method and bone mass density was measured by Dual energy X ray Absorptiometry. The results showed that a significant inverse relationship between total carbonated soft drink consumption and bone mineral density.(beta, -0.099; 95% CI, -0.173 to -0.025) [18].

A survey was conducted in 2004 to find out the health hazards of junk foods in Spanish, results revealed that, the increase in snack consumption is associated with an increase in obesity, tooth decay and other chronic diseases among children and adolescents. The hypothesis suggests a link between the pattern of snack consumption and an increase in the energy density of food consumed a decrease in satiety, passive over consumption, and an increase in obesity. In each age group in Chile the frequency of non-transmissible chronic diseases is increasing due primarily to a westernized diet that is high in fat, cholesterol, sodium, and sugar and a sedentary lifestyle. Education about junk food consumption and healthy eating habits in the family, starling since childbirth and public policies about healthy lifestyles should be strengthened [19].

A study result (November, 2006) revealed that, gain insight into parents' perceptions of the food preferences of their young adolescents, and their negotiating and decision-making strategies around food purchasing and meals, four focus groups were held with 32 African-American parents and three focus groups with 14 Spanish-dominant, first-generation immigrant Latina mothers. Most participants were of low socioeconomic status and were single parents. Many African-American parents emphasized children's growing appetites and preferences for fast food. Many reported making weekday dinner decisions jointly with the child or allowing the child to eat a lunch-like alternative, and allowing serve-yourself meals on weekends. A few prepared traditional ethnic foods. Latina parents reported that their children liked ethnic foods and fast/junk foods. They emphasized buying foods their children wanted, making no eating restrictions, and preparing traditional ethnic dinners without alternatives. Further research is needed on the ways in which socioeconomic inequalities compound barriers to healthful eating, with particular attention to low income and immigrant populations.

A cross sectional study determined the dietary habits and lifestyle among medical students in Karachi. The study samples comprised of 384 students. Among those 53.4 percent were males and 46.6 percent were females. A pre-tested semi structured questionnaire was administered after taking consent. The obtained results showed that 97 percent of the students consumed junk food and according to body mass index 41.7 percent were overweight [20].

An exploratory descriptive approach was adopted to identify the modifiable and non modifiable risk factors of coronary artery disease present among adolescents in Malad, India. A sample of 591 students aged between 12-18 years were selected by non-probability convenient sampling. A structured questionnaire was used to collect the data regarding modifiable and non modifiable risk factors. The results showed that 71 percent of the samples consumed fast food daily and 67 percent of the samples were found to have 3 or more risk factors for coronary artery disease whereas 22 percent of them had 2 risk factors and 11 percent of them had 1 risk factor for coronary artery disease [21].

A study was conducted in USA to describe association between dental caries and intake of beverages in children subjects (n-642) were in the age group of 4 to 7 years. Caries were identified during dental examination by 2 trained and calibrated dentists. The result of the study showed that subjects with caries were identified during dental examination by 2 trained and calibrated dentist. The result of the study showed that subjects with caries had higher means intake. E. g: regular soda pop and regular beverage consumption.

A study was conducted on prevalence of sustained hypertension and obesity in urban and rural school going children in Ludhiana. A total of 2467 adolescent school children aged between 11-17 years from urban area and 859 students from rural area were taken as subjects. Out of 3326 students, 189 were found to have sustained hypertension in urban area. The prevalence was 6.69% (n+165) and in rural area it was 2.565 (n+24). There were 287 (11.63%) over weight students in urban area and 44 (4.7%) in rural area. This is possible related to their sedentary life style and consumption of junk food [22].

A study determined the association between food habits and obesity among adolescents residing in and around Ernakulam city. A semi-structured pre-test interview schedule was administered to randomly selected 100 subjects in the age group of 17–18 years. The food consumption pattern of the subjects revealed that prevalence of overweight was 24% and a habitual skipping of breakfast was 41%, which in turn could result in impaired cognitive ability during school hours. High popularity of junk foods and carbonated beverages was likely to precipitate obesity [23].

A descriptive study at Jamaica estimated the prevalence of overweight, obesity and high waist circumference (WC) in 15-19-year-old adolescents and to investigate the association with fast-food and sweetened beverage consumption. This study enrolled 1317 (598 male, 719 female) adolescents aged 15-19 years using multistage, nationally representative sampling. The overall prevalence of overweight, obesity and high WC was approximately 15 %, 6 % and 10 %, respectively. Prevalence estimated using internal Z-scores was similar to that using the International Obesity Taskforce cut-off points. Obesity (8.0 % in females, 3.3 % in males) and high WC (16.2 % in females, 1.7 % in males) were significantly more prevalent in females when using internal Z-score cut-offs High WC was associated with the absence of fruit consumption (P = 0.043) and overweight with high sweetened beverage consumption (P = 0.018). Overweight occurs frequently among Jamaican 15-19-year and was associated with increased consumption of sweetened beverages. High WC was more prevalent among females and was related to low consumption of fruits and vegetables. Measures to reduce the consumption of sweetened beverages and increase fruit intake may reduce the prevalence of excess body fat among adolescents. (Francis DK, Van den Broeck J, Younger N, McFarlane S, Rudder K, Gordon-Strachan G, Grant A, Johnson A, Tulloch-Reid M, Wilks R.et al.

Fast-food and sweetened beverage consumption: association with overweight and high waist circumference in adolescents [24].

A descriptive study determined the association of socio economic status and life style factors for overweight and obesity in Ahmadabad, India. The study was carried out in 5664 school children of 12-18 years of age and having different socio economic status. Socio economic status and life style factors were determined using pre-tested questionnaire. Results showed as the prevalence of overweight among children was higher in middle SES as compared to high SES group in both boys and girls, whereas the prevalence of obesity was higher in high SES group as compared to middle SES group. Eating habit like junk food, eating outside at weekend also associated. Data suggest to educate the parents and children's regarding health hazards of junk food [25].

Cross sectional study in 2011 determined the risk factor for overweight and obesity among affluent adolescents in Surat city Gujarat, India. The study includes two private school, samples of 12-15 years were selected randomly using a random table. Pre-designed and pre-tested questionnaire was used to collect dietary data. Results states that, the overall prevalence of obesity and overweight was 6.55% and 13.9% .The study showed that important determinants of overweight and obesity were low level of physical activity, watching television or playing computer games, and consuming junk foods. The study suggests maintaining a strict policy regarding nutritional aspect and physical activity is needed at school level [26].

Bowman et al studied the effects of fast food consumption on energy intake and diet quality among children in a national household. This study included 6212 children and adolescents 4 to 19 years old in the United States participating in the nationally representative Continuing Survey of Food Intake by Individuals conducted from 1994 to 1996 and the Supplemental Children's Survey conducted in 1998. Out of them only 30.3% of the total sample reported consuming fast food. Fast-food consumption was highly prevalent in genders, all racial/ethnic groups, and all regions of the country. They have an adverse effect on dietary quality in ways that plausibly could increase risk for obesity [27].

The descriptive study involved (15th January, 2013), 319,000 participants aged 13 and 14 of 51 nationalities; and 181,000, aged six and seven, of 31 nationalities. It shows that 40% teenagers more likely to develop asthma, if they consume over three portions of hamburgers, fries & pizza every week, while this risk falls to just under 30% in under 13s [28].

Literature related to knowledge regarding junk foods in adolescents

Cyoshiko *et al* conducted a survey to determine the levels of awareness regarding the high phosphate content in commercially processed food and drinks among medical and nursing students at the Hirosaki University School of Medicine in Japan. The sample was selected from 190 medical and nursing students (average age 21.7±3 years) were randomly selected, and provided with a list of questions aimed at evaluating their awareness of food and drinks containing artificially added phosphate ingredients. While 98.9% of these students were aware of the presence of sugar in commercially available soda drinks, only 6.9% were aware of the presence of phosphate (phosphoric acid). Similarly, only 11.6% of these students were aware of the presence of phosphate in commercially processed food, such as hamburgers and pizza. Moreover, around two thirds of the surveyed students (67.7%) were unaware of the harmful effects of unrestricted consumption of phosphate-containing food and drinks. About 28% of the surveyed students consume such "fast food" once a week, while 40% at least 1~5 cans of soda drinks/week. After realizing the potential long-term risks of consuming excessive phosphate-containing food and drinks, 40.5% of the survey participants considered reducing their phosphate intake by minimizing the consumption of commercially

processed “fast food” items and soda drinks. Moreover, another 48.4% of students showed interest in obtaining more information on the negative health effects of consuming excessive amounts of phosphate. This survey emphasizes the need for educational initiative to raise awareness of the health risks posed by excessive consumption of phosphate additives [29].

A descriptive study was conducted on students perspective on junk food by using survey method 344 students were selected from the VIT University, Vellore, Tamil Nadu (India). The self administered questionnaire was used to collect data. The analysis showed that 30% of students were not aware about the harmful effects, nutritive value, and quality of the food, chemicals present & its impact on human health. In the questionnaire almost 85% of students gave their opinion about the junk food as unhealthy. Based on the study, it was found that 18% were taking junk food as an alternative to breakfast, 68% of individuals liked junk foods for their taste as it was one of the predominant factor for their choice [30].

A study conducted by James et al. (2004) determined that if a school-based educational program aimed at reducing consumption of carbonated drink can prevent excessive weight gain in children. The study was conducted at six primary schools in southwest England and there was a focus on educational programs on nutrition throughout one school year. The results included a decrease in the consumption of carbonated drinks by 0.6 glasses in the intervention group, but increased by 0.2 glasses in the control group. At 12 months the percentage of overweight and obese children increased in the control group by 7.5% compared with a decrease in the intervention group by 0.2%. The study concluded that a targeted school-based educational program produced a modest reduction in the number of carbonated drinks consumed, which was associated with a reduction in the number of overweight and obese children [31].
A study was conducted to determine the prevalence of consumption of fast food among adolescents and their knowledge regarding the food they eat. A sample was selected from 10 different schools comprising of 2636 adolescents. The data was obtained by questionnaire method. The result revealed that 50% of the adolescents watched fast food being advertised on television and 70% were not aware of the nutritional context of this food consumed by them. The study concluded that children in urban schools liked Junk food but they preferred to have these in between meals and believed that food advertised was healthy [32].

An experimental study was conducted in 2011to asses the nutritional knowledge of adolescents in Hyderabad, India. In this study 164 samples are selected from different schools belonging to eight standards and intervention group is thought about the nutrition importance with audio visual aids. Result of this study revealed that adolescents started to consume vegetables and fruits rather than the junk foods, study suggest that importance of nutrition should be emphasized in future programmes [33].

Suguna. S, Hemachandra Reddy conducted (2013) Cross sectional study regarding knowledge, attitude and awareness among adolescents on health, nutrition and psychosocial aspects. The structured questionnaire was administered to 400 adolescent college going students between the age group of 16-19 years studying in medical, pharmacology and nursing colleges. Out of 400 adolescents 47.3% are aware of daily nutritional needs, 43.8% are aware of usage of fats and oils, 49% are aware about the health care during pregnancy, 35.5% of them use helmet & 20.5 them have suicidal tendencies. The study was conclude that the knowledge regarding nutritional development were good where as in some like health & psychosocial aspect, the knowledge and attitude were similar to nonmedical paramedical students of same age group [34].

An experimental study was done to determine the effect of nutrition education on the knowledge and practice of adolescents regarding Junk food intake. The study was conducted on 487 students in two control and

treatment groups. Data was collected by questionnaire method. The results revealed that nutrition education plays a crucial important role in improvement of knowledge and practice particularly in school [35].

Literature related to opinion regarding junk foods in adolescents

A study to determine whether adolescents will modify their ordering behavior if calorie and fat nutrition information is posted on the restaurant menu. The study selected 106 adolescents aged 11 to 18 years and were asked to order a dinner of their choice from 3 different restaurant menus. The result revealed that 75 did not change any of their orders, 31 did change some orders and only 9 changed their orders. The study concluded that the provision of calorie and fat content information on the menu did not modify the food ordering behavior for the majority of adolescents [36].

Christine et al (1996) studied the effects of Age and Gender on Adolescents Food Habits and Preferences. They reported Reasons among Food Quality and Preference (251-262). This study explored food habits and preferences of 222 French adolescents of 10 to 20 years old. They completed a questionnaire about their eating habits and quoted 10 of their favorite and 10 of their most disliked food or beverages. They also mentioned any change in their preferences. These results show that food habits and tastes are mostly related to age and gender. Girls pay more attention to dietetics and snack less than boys. Young adolescents prefer bland and familiar foods whereas older ones learn to appreciate 'adult' foods [37].

People decide to choose fast food restaurant because they were worried about time. To prepare homemade food, it may take much of time to cook and serve it compared with taking fast food. Fast food restaurant include a wide range of quick and fast service, brands and take only short period to serve it. Consumer make their choice of brands in multi brand situation is one of least understood yet important phenomenon in the marketing of Quick Service Restaurant - Fast Food Restaurant. French SA et al. (2001) summarizes this by saying some people have other reason why they choose fast food restaurant as their primary chosen to eat, because it is way to them spent their time with family, friend or someone special. By along with eating at fast food restaurant because they are quick and easy to get to, and also as a way of socializing with friends and family [38].

A prospective study investigated that fast food consumptions and breakfast skipping are associated with weight gain adolescents. In this study 9919 adolescents participated who belongs to 18- 21 years age group. The results of this study shown that marked increase in fast food consumption and decreases in breakfast consumption occurred over the 5 year interval. Findings suggested that fast food consumptions and breakfast skipping are strongly associated with weight gain among adolescents [39].

The qualitative study was done to examine the meanings of food, health and well-being embedded in the food practices of families of Punjabi heritage living in Metro Vancouver, Canada. Data collection included individuals interviews with 39 members of 12 families of Punjabi Sikh origin (ages 13 to 70 years) and participant observation of a grocery shopping trip and family meal. Food choice was also shaped by concerns for the psychosocial well-being of individual family members, exemplified by women's attention to food preferences of individuals in the family. These findings add to understanding of the varied ways food practices are implicated in constructing ethnic identities, and provide insight into cultural influences on health behaviours [40].

A quasi experimental study was conducted in 2008, to study the current situation of ten types of junk food consumption among 1019 children and adolescent as well as the contributing factors in Haidian District, Beijing .The study finding revealed that, rate of deeply fried junk food intake falls from 60-80%.rate on more than once a day of these junk food were 26-37%,dislikes is 5-11%. Most of the children and adolescent ate junk

food mainly during breakfast. They received the information of junk food mainly from sources as advertisement on TV (67.95%), mother (9.02%), newspaper or magazines (6.71%). The study suggest Education strategies on nutrition should be developed and launched in order to help children develop their own healthy eating behaviors [41].

A study conducted (Oct, 2009) regarding the increasing trends of fast food on 6,212 children and adolescents ages 14 to 19 years old were examined to find out some information about fast food. By using interview technique, it was discovered that on a given day 30.3% of the total sample have reported to have eaten fast food. Fast-food consumption was prevalent both in males and females, all racial/ethnic groups, and all regions of the country. Children who ate fast food, compared with those who did not, consumed more total fat, carbohydrates, and sugar-sweetened beverages. Children who ate fast food also ate less fiber, milk, fruits, and non-starchy vegetables. After reviewing these test results, the researchers concluded that consumption of fast food by children seems to have a negative effect on an individual's diet, in ways that could significantly increase the risk for obesity [42].

A study was conducted in 2012 to find the Contextual factors association with adolescent girls' dietary behaviors. High school girls completed a 7-day diary, recording all trips made. Girls made an average of 11.4 trips per week other than to home or school. Snacks high in solid oils, fats and added sugars (SOFAS) were frequently consumed. Girls reported eating an average of 3.5 servings per week of snacks high in SOFAS at someone else's house compared to 3.0 servings per week at retail food outlets. Findings demonstrate that low nutrient foods are ubiquitous and efforts should be made to reduce their availability in multiple settings [43].

Lucia et al conducted a study on impact of food advertising on children's knowledge about & preferences for healthful food. Among the 229 children that participated in the choice experiment, the average score for food knowledge is 7.76 (SD = 1.18), higher than the average score of 4.78 (SD = 2.08) for food preferences, both measured on the same scale. Although 95% of the 229 children scored 6 or higher in the food knowledge experiment, only 33% chose 6 or more healthy foods in the preference experiment. As regards diet, the average YHEI is 49.6 on a scale between 0 and 80, the relative sugar intake is 27.9%, and the relative fat intake is 26.5%. The findings of the study are that better food knowledge is not seemingly linked to healthier food preferences and diet apparently has no significant effect on weight status.

A National Health and Nutrition Examination survey was conducted in USA to determine the adolescent's beverage consumption trends and causes. The sample consisted of 73, 345 individuals aged 12-16 years. The results of the study showed that, for this age group sweetened beverage consumption increased and milk consumption decreased. Over all energy intake from sweetened beverages increased by 85% and was reduced by 38% for milk, with a 278 total calorie increase. This trend was associated with increased proportion of adolescents consuming sweetened beverages, and reduction in milk consumption. This study recommended the beneficial impacts of reduced soft drink and fruit drink intake.

Literature related to control of junk foods

A cross sectional study was conducted in USA to describe foods and beverages consumed at schools in terms of number of serves. The data have been collected from 1001 children aged 4-12yrs. Food and beverage intake was assessed using a school food checklist. The result of the study showed that 39% of children had fruit bars, 59% had packed snacks (potato, corn chips) and 26% had chocolates during their lunch and coffee breaks. Ten percent of children reported using the canteen and fast foods were the most frequently purchased items. A reduction in energy dense snacks and the promotion of healthy sandwiches would improve the healthiness of school lunch [43].

The survey was conducted 2008 to determine the life style of adolescents in Delhi India. The study include 1,500 Indian school students enrolled in sixth to eleventh grades drawn from rural, urban, and metro settings. The study documents the multiple concerns related to inappropriate dietary practices (fast food consumption, cold drinks, low fruit and vegetable intake), irregular sleeping habits, less religiosity, mild activity pattern, unhealthy daily routine and pursuance of different forms of risk behaviors. The study also showed an association of life style with several contextual variables. The results suggest need for urgent attention to deal with the emerging concerns of risks and promoting factors of health through relevant policy-oriented reformulation, coordinated efforts among stakeholders, and initiating culturally appropriate lifestyle interventions among adolescents [44].

A descriptive, cross-sectional study (March 2009) conducted regarding "Characteristics and Factors Influencing Fast Food Intake of Young Adult Consumers in Johannesburg South Africa". The data was collected from 341 population consisted primarily of young adults (242) aged between 19 to 30. Twenty-one per cent of all participants had fast food at least once a week, while 27.6% had it two to three times a week. Socio-economic group and gender were significantly related to fast food intake, with a larger proportion of participants 65%, in the lower socio-economic group showing more frequent use. Males consumed fast food more frequently than females. The most popular fast foods consumed were burgers (69.5%), pizza (56.6%) and fried chicken (38.4%). Soft drinks were the most popular beverage consumed (56%). The main reasons for choosing fast food were time limitations (58.9%), convenience (58.2%) and taste (52.5%) [45].

A cross sectional study was conducted in 2011 to examine whether state and district level nutritional policies addressing junk foods in school vending machines and school stores were associated with less junk food in stores and school vending machines. Results revealed that 93% of school stores are prevalent at high school level with junk foods. The study suggests that state policies are required to prohibit the junk foods in schools [46].

Wethington *et al* conducted a cross-sectional analysis on a sample of 721 youth (9–18 years) using the 2010 Youth Styles and Health Styles surveys. Multivariable logistic regression was used to examine the associations between socio demographic variables and the use of calorie information at fast food/chain restaurants. those who visited fast food/chain restaurants, 42.4% reported using calorie information at least sometimes. Girls were more likely than boys (adjusted odds ratio (aOR) = 1.8, 95% confidence interval (CI) = 1.2–2.5) and youth who were obese were more likely than those at a healthy weight (aOR = 1.7, 95% CI = 1.04–2.9) to use calorie information, and youth eating at a fast food/chain restaurant twice a week or more versus once a week or less were half as likely to report using calorie information (aOR = 0.5, 95% CI = 0.4–0.8). Researcher reveals that Public health education efforts can benefit from research to determine how to increase usage among youth so that their food choices are appropriate for their caloric needs [47].

An experimental study was conducted in 2011 to assess the nutritional knowledge of adolescents in Hyderabad, India. In this study 164 samples were selected from different schools belonging to eight standards, and intervention group was thought about the nutrition importance with audio visual aids. Result of this study revealed that adolescents started to consume vegetables and fruits rather than the junk foods, study suggested that importance of nutrition should be emphasized in future programmes [48].[62] The above study suggested that there is need to make awareness on health hazards of junk foods among adolescents is important to modify their dietary pattern. In doing so we can control the intake and prevent health problem in India related to junk food.

Conclusion

Above all studies done by various scholar in different countries regarding health hazards of junk food, clearly gives insides that need to make awareness on health hazards of junk foods among adolescents is important to modify their dietary pattern.

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