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Research Article

**ADDICTION OF JUNK FOOD AND ITS EFFECTS ON EATING  
BEHAVIOUR OF CHILDREN**<sup>1</sup>Seemin Saleem, <sup>2</sup>Muhammad Junaid, <sup>2</sup>Khurram Iqbal<sup>1</sup>The University of Faisalabad, Faisalabad.<sup>2</sup>Allied Hospital, Faisalabad**Abstract:**

**Introduction:** Junk food being high in caloric count as well as rich in palatable contents is very low in nutritional values. It is being consumed in larger quantity by children as they show greater inclination towards junk because of their psychological vulnerabilities. This leads to generation of desire to eat more and more food and disturbance of healthy eating habit. This can be influenced by factors like parental involvement and social circumstances.

**Objective:** To investigate the relation between increased intake of junk food and development of addictive eating behaviour in children.

**Study design:** Descriptive cross sectional study.

**Setting:** Community and Elementary schools of Faisalabad.

**Duration of study:** Three months.

**Sample size:** 100 children. Both male and females were included.

**Data collection procedure:** The children were given survey questionnaires and then assessed accordingly.

**Results:** The excessive intake of junk food disturbed the eating habits of children and promoted the emotions of irresistibility while eating food.

**Conclusion:** The over consumption of junk food is related with development of addictive eating behaviour in children.

**Key words:** Junk food, Addiction, Eating, Children.

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**INTRODUCTION:**

The childhood period plays a significant role in determination of person's health status as the growth occurs at maximum and most stable rate in this period. The healthy nutritional requirement is supposed to be the top priority goal during this phase. Alongside growth, the foundation of most of the habits, for instance, eating habit is laid down in childhood, which an individual is going to follow throughout his life.(1) With the passage of time, the transformation of food consumption habits have caused the substitution of healthy nutritious food by the things which are processed in multiple ways to make them tasteful, easily accessed, having high levels of salt, fats, sugars and below average nutritional values. These substances are collectively named as Junk Food.(2)

The term junk food is analogous to Fast food; food which is served quickly in ready-to-eat form. In 1940s the fast food was started to be produced in America first time and later on its utilization soared radically in various countries including Asian.(3) Children are mostly attracted towards junk food. Many factors can contribute in promoting this fondness for example, better taste, easy availability, parent's occupation, influence of peers and attractive marketing strategies.

The main ingredients of junk food are salt, sugars, processed wheat and fat. Amongst all, sugars contribute greatly towards causing addiction to junk food. Why humans are addicted to all the sweet substances more? The answer can or might be sought in those candies which the kids were used to be rewarded with in response to their nice behaviour in childhood bringing about psychological dependency. (4) Many evidences show that processed foods or the constituents added in the junk food manufacturing can provoke the emotions of irresistibility and temptation which eventually lead to addiction . (5, 6) The junk food addiction is analogous to being addicted to drugs (e.g. heroin) because it involves the same areas of the brain, meticulously similar neurotransmitters and most of the pleasure and withdrawal symptoms arising with excessive intake as well as avoidance are identical. (7) The studies on animals, predominantly rats, find that overly consumption of sugars and processed foods trigger dopamine release and cause similar effects resembling indulgence in substances of abuse and they show classical behavioural pattern of addiction. (8, 9) Literature shows that the subjection of young

ones with their vulnerable and fragile neural systems, to the addictive stuff like alcohol or nicotine, can prove as a potent risk factor to the excessive use of that substance in future. (10) Therefore, if the junk food also possesses addictive substances then children will be the most susceptible creatures as compared to adults owing to their mental vulnerabilities.

Along with sugars, wheat glutes release opioid peptides which are able to cross the blood brain barrier and excite the opioid receptors located there and contribute in addiction. (11)

Studies also provide data regarding the addictive attitude playing significant role in aggravating baffling eating behaviour in children. These phenomena of emotional as well as binge eating in children lead to pronounced loss of eating control habits and obesity.(12) This research explores the relation of junk food consumption with provocation of addictive eating behaviour in children.

**Methodology.**

**Study design.** This is a descriptive cross sectional study.

**Duration of Study.** It was conducted over the time span of of three months. (February to April 2018)

**Setting.** In the community and elementary schools of Faisalabad.

**Sample size.** The survey includes 100 school going. **Inclusion criteria.** Children belonging to both genders were included in the survey.

**Data collection procedure:** The data was conducted by means of two questionnaires. First one is obtained from tools available online on various survey websites.(13) It is based on consumption frequency of multiple types of Junk food in past one week, parental monitoring and the other questionnaire is based on The Yale Food Addiction Scale for Children, to evaluate the relation of Junk food eating quantity with food addiction level. (14)

**Data Analysis:** The data was analysed by Microsoft Excel and Statistical Package Social Sciences software package (SPSS) 20 using Pearson Chi-Square test. Microsoft Excel is used for tabulation and SPSS is used for descriptive analysis statistics.

**RESULTS:**

The participant children ranged from age 7 to 13 years with mean age  $10.02 \pm 3.2$  years. Male children were 49% and female 51%.

Figure 1.

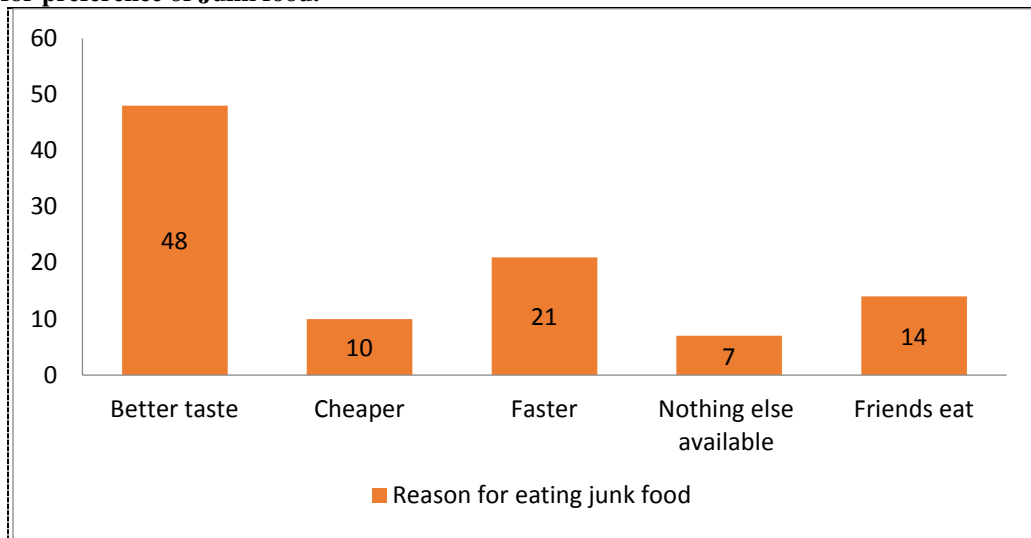
**Reasons for preference of Junk food.**

Figure 2

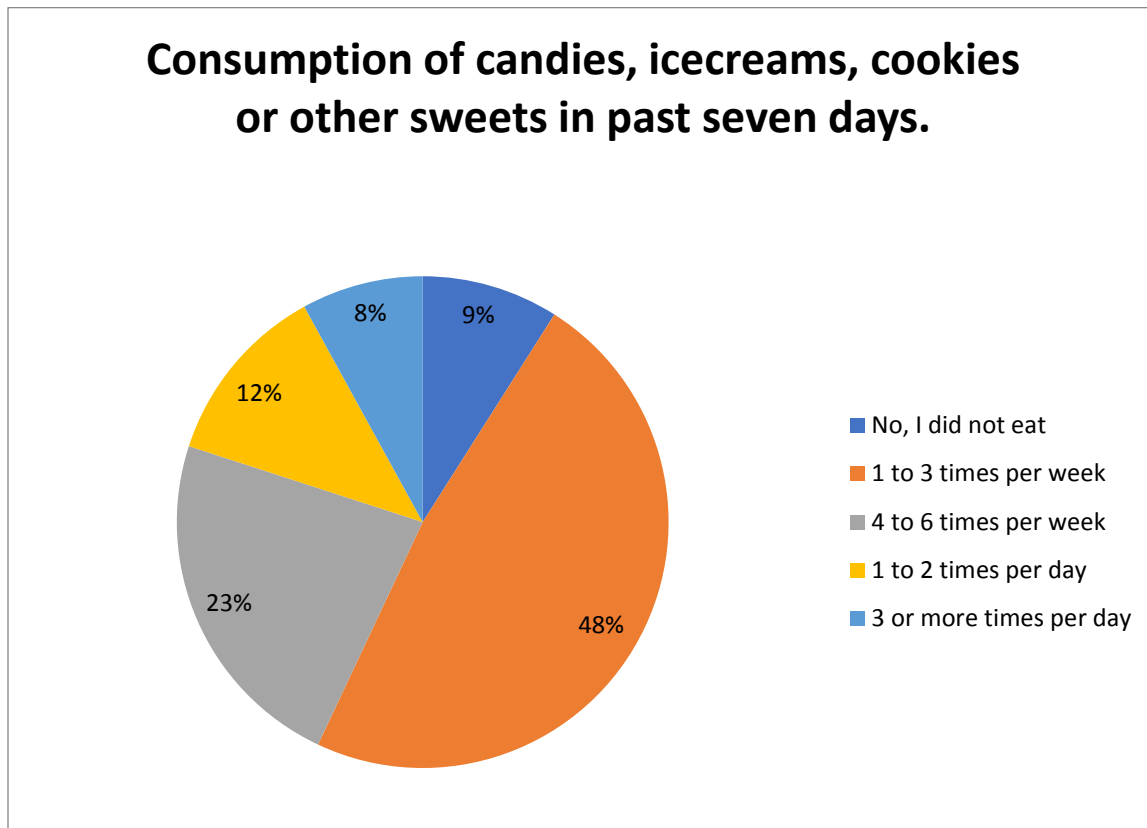


Table 1: Parents concern regarding junk food consumption by children.

Parent's response	Yes, parents provide healthy food only	Keep healthy food but sometimes allow junk food as well	No, they don't care
Frequency	63	28	9

Figure 3:

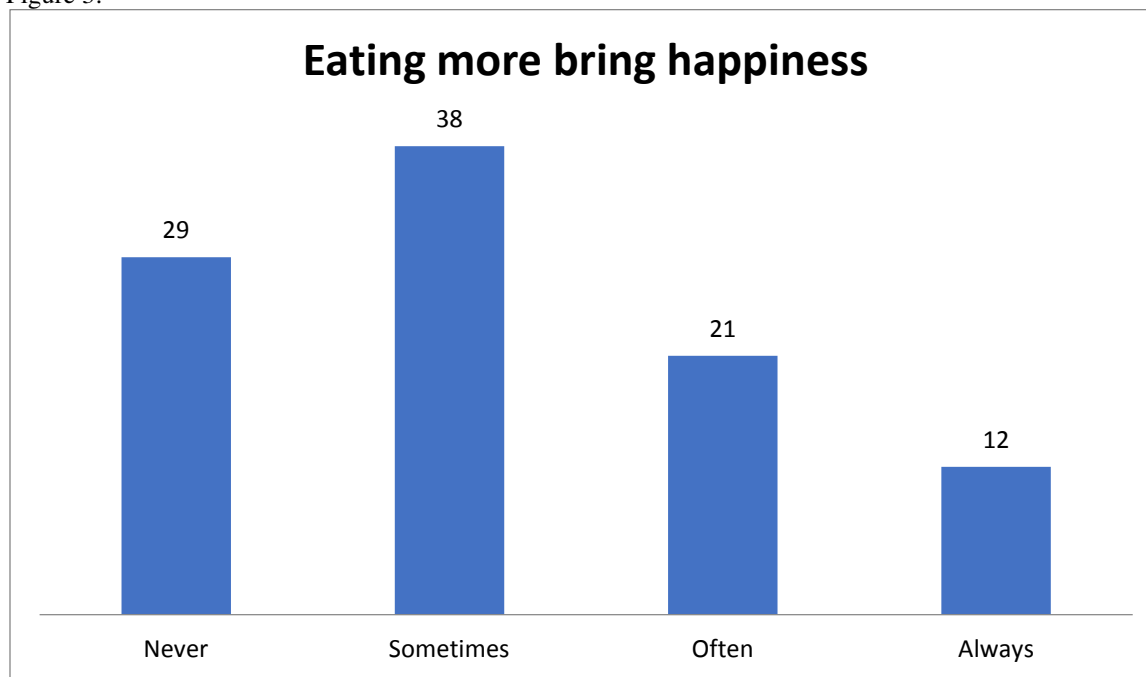


Table 2: Relation of consumption of Junk Food in past seven days with the feeling of hard to stop after starting the meal and eating without being hungry.

		When start eating feel hard to stop			P-Value	Eat food even when not hungry		P-Value
		Never	Sometimes	Often/Always		Never	Sometimes	
During past seven days how many times ate junk	1 did not eat/drink Junk food during the past 7 days	1	0	4	0.000	1	4	0.003
	1 to 3 times during the past 7 days	0	45	0		10	35	
	4 to 6 times during the past 7 days	27	5	0		16	16	
	1-2 times per day	3	0	10		0	13	
	3 or more times per day	0	0	5		0	5	

Table above shows the relationship between the frequency of junk food taken by the children during the past week and their desire and urge for food. It is clearly seen in the table that the children who have greater urge for food do take food more frequently as compare to those with less urge. Moreover p-value after applying Pearson chi square test has also revealed that there is an association lying between frequency of junk food taken during past week and 2 parameters of urge for food viz. "Hard to stop eating" and "Eat even when not hungry".

### DISCUSSION:

Junk food is the diet rich in fats, sugars, salt and low in nutritional values. The goal of this study is to assess the relation between excessive consumption of junk food and its association with addiction like

eating behaviour in children. The amount of junk food consumption by children in past seven days was observed to be around 90% with almost 20% count of children having it on daily basis. This number is almost equal to the count of 30% children enrolled in

Turkish study with mean age 12years who consumed fast food on daily basis.(15).

Children consider the junk food tastier than homemade healthy food. The biggest reason of preference of junk food stated by almost 50 children is 'Better taste' (Figure 1) these results were consistent with the results found by research carried out in US based on evaluation of children's 7-12 food preference, by creating a virtual grocery store. Mostly children chose tasteful, unhealthy food items despite of differentiating healthy food from unhealthy.(16)

There are evident clues that extra ordinary uptake of sweet stuff actually brings about changes in brain chemistry. The sweet intake was considered to be safe and rewarding thing in prehistoric times and hitherto brains fail to anticipate it as unhealthy when sugar gets available in processed form. When taken extravagantly, it triggers the stimulation of dopamine receptors in nucleus accumbens of brain and down regulates the receptors and this mechanism is similar to the sense of reward achieved through cocaine and heroin intake. (8) Our study showed that a predominant number (90%) of children consumed sweet stuff in past seven days with 20% taking sweets many times a day (Figure 2). This helps boosting the addictive eating behaviour in them.

Parental influence plays a paramount role in development of children's eating habits.(17) Parents being role model for the family, make dietary choices and it is their responsibility to choose wisely and warn the children regarding the possible hazards of junk food intake. 63% participants said their parents allow only healthy food at home, (Table 1) whereas almost 30% expressed that junk as well as healthy food is available at their homes. Jenifer et al(18) in their study elucidated that parents affect the eating behaviour, choices of children since the time of infancy and serve as template for development of eating habits. Their healthy preferences will help children to adopt healthy eating behaviour likewise.

The addictive intake of junk food is associated with many factors like happiness. Approximately 70% (Figure 3) children stated that eating more food resulted in happiness. Professor Hung-Hao Chang from National Taiwan University discovered that the children who ate more junk they tend to be obese but they were also likely to be less unhappy.(19) He identified the trade off relation between obesity and happiness of children.

The junk food is composed of specific ingredients which add flavours and make food irresistibly tasteful, tempting and addictive. Table 2 shows a significant relation between excessive intake of junk food and addictive eating behaviour in children.

Children eating more palatable junk food experience unstoppable feeling once starting the meal and urge to eat even without hunger. Michael Moss in his book "Salt, Sugar and Fat" (20) explained the mechanism of addiction incited by junk food which leaves the brain craving more and more for these products. The consumption of high caloric foods cause alteration in brain neurotransmitters' chemistry and consequently the development of abnormal eating behaviour in children causing emotional eating, binge eating disorder and obesity.(21)

### CONCLUSION:

Children are bearing large impact on their personalities owing to excessive preference of junk food. This study portrays a consistent relationship between consumption of junk food and development of problematic addictive eating behaviour in children. This should be curtailed by active parental involvement and counselling of children.

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