



## Children's Predilections Concerning the Fast- Foods/Junk- Foods in Saudi Arabia

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*(Received 10 October 2019, Revised 06 December 2019, Accepted 14 December 2019)*

*(Published by Research Trend, Website: [www.researchtrend.net](http://www.researchtrend.net))*

**ABSTRACT:** Now a day's fast-food consumption trends are increasing in all parts of the world. Food choices are affecting our children's health every day, that includes their health, growth, and mental abilities. Furthermore, we should not ignore the consequences that have spread among children in our society, such as obesity and non-communicable diseases resulted from impairment foods and the incorrect selections of their meals. Healthy food is essential that contains nutrients to maintain their overall health condition. This research aims to conduct the study towards fast food preferences by children, to know the factors that influence their buying choices and to compare the trends of fast food consumptions having any relationship with particular demographic such as parents' income and their employment status. To achieve the goals of research, descriptive research approach has been used. Moreover, the data has been collected from the children's parents who are living in this region through surveys of 344 parents using the structured close-ended questionnaire were sent electronically to the respondents. Data analysis was done using online analytical tools (<https://www.socscistatistics.com>). For analysis, descriptive statistics and Chi-square test at 0.05 significance level were applied. The challenges faced by the researcher were lack of financial support and materials related to the selected topics. It is revealed that children prefer almost all food collections, and it is also interesting to note that homemade foods are the least preferred to them and the consumption of unhealthy foods is very high among the children.

**Keywords:** Fast Food, Children, Behavior, Food Manufacturer, Saudi Arabia.

**Abbreviations:** FF, Fast Food, JF, Junk Food, KSA, Kingdom of Saudi Arabia.

### I. INTRODUCTION

Nutritious food plays a vital role in human body development and prevention of diseases. Modern-day deviation from organic and pure diet affects an individual's health [1]. Healthy food is highly associated with our children's physical, social, and mental capabilities enhancements [2]. The World Health Organization [1] is a guiding and coordinating authority on international health [3], besides the other research indicates that childhood obesity has become one of the most severe health problem and challenge in 21<sup>st</sup> century. There are 42 million children below the age of 5 years overweighted, and the number keeps increasing [4].

The healthy food and nutrition are playing an essential role in children's growth and health not only in their childhood but also in their life. Nutrition is the only way to have a healthy foundation and well-being in their early ages. Based on publication from Virginia State University, children are acquiring from 4 to 5 pounds and their tall is increasing between 2–3 inches each year and the right nutrition is highly contributed in their physical activities and proper growth [5]. This importance is not only for growth but also for children's mental improvement. Many pieces of research in that field showed that healthy food and nutrition is one of many other factors that affect mental performance which is also vital in productivity in schools and life [6].

Research in the United States shows the rising of fast and junk food and food with a high level of sugar consumption are directly contributed to this problem,

especially if it combined with the unfortunate physical activities. Another study conducted on Canadian children shows a significant increase in the percentages of the obese among children due to the fast-food intake [7]. Also, another issue that makes unhealthy food major problem is non-communicable diseases (NCDs).

Many studies have linked the ingredients and contents of unhealthy food with many diseases such as cancer, heart disease, hypertension, and diabetes which is called NCDs [8]. Increase in junk food consumption is a global phenomenon having a prevalence of around 70% [9]. It is considered as an emerging major public health challenge among all age groups and especially in young adults with a male predominance [10].

Other studies highlighting reasons for increased consumption of junk food have given the insight to avoid them, but unfortunately, measures taken are not as effective as they need to be [11]. To prevent the problem of health predictions of disease with earlier symptoms are the most needed factor in the health care industry [12].

In this modern era, it seems to have engulfed members of every age and race [13]. A study has been done an increase in the consumption of Junk Food (JF) among school-aged children (SAC), possibly leading to obesity and diet-related diseases among them. Moreover, conducted a study to assess the consumption of JF by SAC in rural, Himachal Pradesh. They found that high prevalence (36%) of consumption of JF among SAC during the last 24 hours [14].

The current study indicate that majority (around 97.5 %) of the children consuming fast/ Junk food less than

four times in a week which is the highest number unhealthy food consumption and its support the findings that have been done in Himachal Pradesh, India. In further research, the researcher concluded that overweight and obesity is a significant problem in school-going children. The higher socioeconomic status continues to remain an essential driver of this epidemic in the younger generation and affects demographic and dietary determinants of this problem [15]. A cross-sectional survey was conducted from More than one-quarter of the children in urban Lalitpur were found high junk food consumption and sedentary activity were found to be significantly associated with childhood overweight/obesity [16].

Concerning Saudi Arabia, some studies have been conducted, and it has considered that the obesity has a community health problem in the region that leads to the chronic ailments, particularly with children as they are exposed easily to it, due to inability to tolerate the external environmental forces by them. Besides, the study shows that the cause of this problem has a significant relationship with the low nutritional value foods and junk foods eating habits of people [17, 18]. Recent studies have shown that the trends in junk food consumption, especially in adolescents and young adults, as well as the number of fast-food restaurants, have significantly increased in Saudi Arabia also [19]. Another factor should be addressed; the daily capita fat consumption per day in Saudi Arabia had increased to 143%, because food now is more affordable and because of the social concept changing where it was viewing the diet as a simple and essential required nutrition, but soon it becomes one of the lifestyles factors [20]. At the current scenario, this research aims to study the food preferences with particular reference to children they prefer in their food and the related factors that may affect their choices.

An article published in 2014 with and reported by specialists in Clinical Nutrition and the Department of Pediatric in King Saud University, highlighted that childhood obesity had become a global issue. Another study had been conducted on 196 schoolgirls and 85 schoolboys in Riyadh, it found that 73% of the obese or overweighted children are consuming junk food for four times per week or even more. On the other hand, 16% of them were consuming junk food between 1-3 times per week [21]. Another study conducted on Canadian children shows a significant increase in the percentages of obese among children [7]. Endocrine Reviews had published one other study concluded that access to unhealthy food is not under control in the cafeteria and vending machines in schools. To avoid the habits of eating junk food and unhealthy food in children need to be educated as education plays an essential role in building the nation and it is instrumental in bringing a change in the country as a whole [22].

The most responsible person for children's food is the parents. Parents should provide support opportunity for their children and choose the type of food, time, and place of the menu where the child can only select whether to eat what their parents provided and how much to eat. Furthermore, Parents should be aware of the healthy choices and amount that can be given to their children as well as the statement and phrases they use which has a tremendous impact on the child's

eating behavior [5]. Also, a study conducted on Saudi children in 2013 concludes that the socioeconomic status is highly associated with childhood obesity and their food choices and preferences [19]. However, parents should have control over what their children are watching. Even in Saudi schools, unhealthy food such as snack chips, sodas, cold canned juices and many other low nutritional value foods are available in the cafeterias.

It is indisputable how children are engaged to the unhealthy food that is for many reasons such as, resulted from a lack of awareness communications in the schools and by parents as well as the temptation messages perceived from marketing campaigns. Furthermore, that kind of food is leading to numerous consequences that will miff them socially, psychologically, and physically either now or in the future. So, there is a need to attract children to eat healthy foods.

It is noted that most of the previous study has been conducted on nutrition, obesity and health points of the view that relates to unhealthy food. Little research has been done on the selected topic. Therefore, this research aims to children's' predilections concerning fast/junk -foods in Saudi Arabia. Hence the following objectives have been undertaken to the study.

Objectives of the Study:

1. To identify the types of fast food, the preferred by children in KSA.
2. To explore the fast food consumption rate weekly.
3. To explore the factors that influence the children to buy fast food.
4. To analyze the relationship with Fast Food consumption rate among children with family income-wise.
5. To examine the relationship with Fast Food consumption rate among children with parents' employment status wise.

## II. MATERIALS AND METHODS

A convenience survey-based study with a duration three months from October to November 2018, was conducted through online using google form. Furthermore, the link of the structured questionnaire was distributed through e- channels, including WhatsApp and the E-mail among the parents through snowball sampling method in Saudi Arabia as the targeted segment for this research, were children. Besides, this study included a sample of 344 Saudi parents (father and mother) of children to know their children preferences and the choice in relation the fast/ junk food consumption, as they are more aware to their children food consumption habits and familiar with their kids' preferences. Subsequently, data gathering, the data were analyzed using online social science statistical tools (<https://www.socscistatistics.com>). For analytical purpose and to accomplish the objectives of the study suitable statistical descriptive statistics tools and chi square as well as chi-square goodness of fitness test at 95% confidence at 0.05 significance level were used to generate some hypothesis that could be generalized to the population and further study can be done to validate it in future scenario by the research community.

### III. RESULTS AND DISCUSSION

From the Table 1, it can be seen that majority of the respondents are females. As this is the excellent sign to minimum error because the mothers are more familiar with their kids' preferences and more knowing what they like and dislikes. The majority of respondents were below the 45 years of age group (93% of the total respondents). Majority of total respondents (84%) belongs to graduate and above graduate degree to the level of education. It means they are more aware of healthy food and more careful in the children food. The data shows that respondents from the western region participated at the highest level (around 80% of the sample) as compared to another part of Saudi Arabia.

Around male member (father parents) 70% were engaged in working member in the family followed by 20% both mother and father were involved and employed, 6% of the responses indicated the only mother are employed respectively. When respondents were asked regarding the family income 50% respondents fell in the monthly income 5 to 20 thousand of Saudi Riyal to their monthly salary followed by above 25000 SR (around 14%), 20 to 25 thousand (9.3%) and less than 5000 SR (4.65%) were corresponding. The age of the children the parents belongs to the majority was between the 3 to 8 years (41.86%) followed by less than three years (34.88%), 8 to 13 years (16.82%) and 13 and above years of age were 6.98% respectively.

**Table 1: Respondents Demographic Information.**

Respondents gender wise	Gender	Frequency	%	Cumulative %
	F	295	85.76	85.76
	M	49	12.24	100
	Total	344	100	
Parent Age Groups Percentage	Less than 34	152	44.2	44.2
	35-39	112	32.6	76.7
	40-44	56	16.3	93
	45-49	16	4.7	97.7
	Above 50	8	2.3	100
	Total	344	100	
Parent Educational Level	Education Level	Frequency	%	Cumulative %
	High School	8	2.33	2.33
	Undergraduate degrees	40	11.63	13.96
	Graduate degree	248	72.09	86.05
	Above Graduate	48	13.95	100
	Total	344	100	
The Current Region	Region	Frequency	%	Cumulative %
	Western Region	272	79.1	79.1
	Central Region	72	20.9	100
	Others	0	0	100
	Total	344	100	
Parents employment status	Only the father is working	241	70.05	70.05
	Only the mother is working	24	6.98	77.03
	Both are working	69	20.06	97.09
	None of them working	10	2.91	100
	Total	344	100	
Family Monthly Income	Income in Saudi Riyal	Frequency	%	Cumulative %
	Less than 5,000	16	4.65	4.65
	5,001-10,000	72	20.93	25.58
	10,001-15,000	96	27.91	53.49
	15,001-20,000	80	23.26	76.75
	20,001-25,000	32	9.3	86.05
	above 25,000	48	13.95	100
Children Age Group	Years	Frequency	%	Cumulative %
	Less than 3	120	34.88	34.88
	3 – 8	144	41.86	76.74
	8-13	56	16.28	93.02
	13 and above	24	6.98	100
	Total	344	100	

From the Table 2 it is identified that most types of fast food that children prefer and attract to it were Candies, chocolates & Sweets (23.26%) that ranked number 1 to their preferences of fast food followed by Pastries and Sandwiches (18.6, Ranked 2), Fruits and Fresh Juices (16.57%, ranked 3), Breakfast Cereal/Snacks (14.83, Ranked 4), Fried Food (13.66, Ranked 5) and Homemade Food (13.08%, Ranked 6) among the selected categories of food in the question. From the result, it can be analyzed that the children almost preferred all categories of foods and there was not a single item of food felt by outliers and all the types of foods were very close to mean of the sample.

From the above table, a suggestive hypothesis can be drawn that there is a strong relationship between the food categories, and children preferred all. As calculated, chi-square value is higher than the table value, and the p-value is zero, so we can infer that there is a very significant association with the variables. From the Table 3 it is indicated that majority (around 97.5 %) of the children consuming fast/Junk food less than four times in a week, among all children less than two times junk food consumption were reported by the parents around 53.49% followed by 44.19% consume 2-4 time per week.

**Table 2: Type of Foods Preferred by Children.**

	Responses Frequencies	Percent	Rank Order
Pastries and Sandwiches	64	18.6	2
Candies, chocolates & Sweets	80	23.26	1
Homemade Food	45	13.08	6
Fruits and Fresh Juices	57	16.57	3
Breakfast Cereal/Snacks	51	14.83	4
Fried Food	47	13.66	5
Others	0	0	0
Total	344	100	

Standard Deviation Calculation:  $N: 7, M: 49.14, SS: 3674.86, s^2 = SS/(N - 1) = 3674.86/(7-1) = 612.48, s = \sqrt{s^2} = \sqrt{612.48} = 24.75$   
Chi-square Value: 74.779069767442, Degrees of Freedom: 6, P value: 0, Rows X Columns: 7\*1, Critical Chi-square value: 12.591587243743978

There was a little per cent said that their children taking fast/ junk foods more than three times a week was 2.32% among the respondents. Here it is notable the result is also backup the previous study which indicates the high occurrence of consumption of JF among SAC during the last 24 hours [14]. The chi-square goodness of fit test (Table 4) suggests that there is a strong relationship with the variables of unit consumption by the children as reported from their parents. Moreover, it can be concluded that it has significant value in the relationship between the unit consumed by the children. The suggestive hypothesis can be made that there is a relationship between the unit consumption of junk food by the children weekly. The percentage of unhealthy food consumption is very high, and it needs to take the corrective measure by the stakeholders of children. When the parents were asked regarding the factors that influenced and attracted to consume fast/Junk foods the Attractive Packing (25.87%, Rank Order 1), Taste of food (22.09, Rank 2), Affected by a promotional marketing (20.35 %, Ranked 3), Convenience and Ease of Accessibility (13.66%, Ranked 4), Product Quality (8.72%, Ranked 5), Size of food with price (7.27%, Ranked 6) and other factors (2.04%) were respectively.

When looking to in-depth analysis, around 80% of the attracting factors were by the manufacturer of the fast and junk foods to consume among the children (Table 5). So it can be reasoned that the manufacturers having a significant role of the temptation to buy and consume the children so there should be a proper guidelines and policy by the government for manufacturing the fast and junk food and its need to be produced in the way of healthy product, so it could not harm the health of future generation. Besides, it is consuming junk food by children. In this regard, the chi-square test (Table 6) reveals that the p-value is more significant than the alpha value and chi-square calculated value is less than chi-square critical value. Therefore, it can be inferred that there is a no relationship between the fast-food consumption pattern weekly with the parent's income-wise. Hence, the income of the parents does not affect the choice of junk food consumption by children. From the above result (Table 7) it can be seen that the fast-food weekly consumption patterns do not have any relationship with the parent's employment too. Commonly, it is believed that due to the busy life and both parents are engaged in the job, and there is no time to care for the children food intake.

**Table 3: Fast/Junk Food Consumption Rate Weekly.**

Fast Food Consumption Rate Weekly	Frequency	Percent	Cumulative Percent
Less than two times	184	53.49	53.49
Two to Four times	152	44.19	97.68
Four times and above	8	2.32	100
Total	344	100	

**Table 4: Chi-square Goodness of Fit Test of Fast Food Consumption Rate Weekly.**

	Observed	Expected	Difference	Difference Sq.	Diff. Sq. / Exp Fr.
Less than two times	184	114.5	69.50	4830.25	42.19
Two to Four times	152	114.5	37.50	1406.25	12.28
Four times and above	8	115	-107.00	11449.00	99.56
Mean: 114.667, The Chi-square value is: 154.024 The p-value is < .00001. The result is significant at p < .05., Critical Chi-square value: 5.991464547107977, Chi-square Value: 153.302325581395, Degrees of Freedom: 2, P value: 0					154.024

**Table 5: Factors That Influence the Children to Buy Fast Food.**

Attributes of Fast foods	Frequency	Percent	Cumulative Percent	Rank Order
Product Quality	30	8.72	8.72	5
Taste of food	76	22.09	30.81	2
Attractive Packing	89	25.87	56.68	1
Affected by a promotional marketing	70	20.35	77.03	3
Size of food concerning price	25	7.27	84.3	6
Convenience and Ease of Accessibility	47	13.66	97.96	4
Others	7	2.04	100	7
Total	344	100		

Coefficient of Variation Calculation:  $N: 7, M: 49.14, SS: 5474.86, s^2 = SS/(N - 1) = 5474.86/(7-1) = 912.48, s = \sqrt{s^2} = \sqrt{912.48} = 30.21, CV = (s/M) * 100 = (30.21/49.14) * 100 = 61.47$  Coefficient of Variation = 61.46818%.  
Standard Deviation Calculation:  $N: 7, M: 49.14, SS: 5474.86, s^2 = SS/(N - 1) = 5474.86/(7-1) = 912.48, s = \sqrt{s^2} = \sqrt{912.48} = 30.21,$   
Chi-square Value: 111.406976744186, Degrees of Freedom: 6, P value: 0, Critical Chi-square value: 12.591587243743978



**Table 6: Fast Food Consumption Rate among Children with Family Income Wise.**

Income/Food Choice per week	Less than two times in a Week	Two-Four times	Four and above	Total
Less than 5,000	9	7	0	16
5,001-10,000	39	32	2	72
10,001-15,000	51	43	2	96
15,001-20,000	43	35	2	80
20,001-25,000	17	14	1	32
above 25,000	25	21	1	48
Total	184	152	8	344 (Grand Total)

Chi-square Value: 0.602411196897, Degrees of Freedom: 10, P value: 0.999983911279, Critical Chi-square value: 18.307038053275143

**Table 7: Fast Food Consumption Rate among Children with Parents' Employment Status Wise.**

Parents employment status/Food Choice per week	Less than two times in a Week	Two to Four times in a week	Four times and above	Total
Only the father is working	128	107	6	241
Only the mother is working	13	11	0	24
Both parents are working	38	30	1	69
None of them working	5	4	1	10
Total	184	152	8	344 (Grand Total)

Chi-square Value: 3.474668712388, Degrees of Freedom: 6, P value: 0.747336807528, Critical Chi-square value: 12.591587243743978.

So, they are accustomed to buying the food from outside of the home. However, this result shows that there is no relationship with junk food s consumption and children parents' employment. As in the table, chi-square test P-value is higher than the significant value that is 0.05. So, it is apparent now that fast/junk food consumptions among children do not have any relationship with the employments of the parents.

#### IV. CONCLUSION

From the study, we can conclude that the majority of participants are women because this is a good sign of the minimize the error of sample research because mothers are more aware of their child's preferences and know like and dislike of their children. Majority of respondents are less than 45 years old (93% among all respondents). Besides, 84% belong to the graduate degree and above level of education which shows that they are more aware of healthy foods and more careful in proper feeding of children. Data indicate that participants from the Western Region participated at the highest level compared to another region in Saudi Arabia. The age of the children of the parents belongs to the majority between less than eight years. It was determined that the five best fast food types that children prefer and attract are desserts, chocolates, sweets, cakes, sandwiches, fruits, fresh juices, breakfast cereals/snacks and fried foods in descending order, respectively. Children prefer almost all food categories, and it is interesting to note that homemade foods are the least preferred for them. From the analysis, a suggestive hypothesis can be devised that there is a strong relationship between the food categories favored by children. Most of the children (about 97.5%) consume junk/fast food less than four times a week; parents reported that junk food consumption less than doubled about 53.49%, followed by 44.19% consume 2-4 times a week.

The chi-square goodness of fit test shows that there is a strong relationship with the variables of unit consumption by the children. There is a relationship between the unit consumption of junk food by children every week. The percentage of unhealthy food consumption is very high and must be taken through corrective measures by the stakeholders, such as children, parents, schools, Government and fast food manufacturers. The first five factors that affected fast food/Junk foods attracted its consumption are Attractive Packing (Rank Order 1), Taste of food (Rank 2), Affected by a promotional marketing (Ranked 3), Convenience and Ease of Accessibility (Ranked 4), Product Quality (Ranked 5) and Size of food in relation to price is ranked 6 respectively. When observing with in-depth analysis, the most critical factors 80% are related to the manufacturer of the fast and junk foods to consume by the children. Therefore, it can be suggested that manufacturers having a vital role in the temptation to buy and consume junk food to the children, hence, the government needs appropriate guidelines and strict policies for the fast-food manufacturer. In addition, the manufacturer needs to make a healthy product so it could not harm the health of the future generation. Besides, it is concluded that there is no relationship between the pattern of weekly fast food consumption and parental income. Therefore, we can conclude that parents' income does not affect the choice of fast food consumption for children. Also, the result indicates that weekly fast food consumption patterns for children have nothing to do with the work of parents. Finally, it is recommended that the marketer has to market balanced, healthy and organic foods in children's meals. The taste factor should not be ignored, but it must be maintained from a healthy perspective. There is a need for awareness program for the children from the parents, schools and government for the children to let them aware of our products and the benefit of healthy

consumptions. Besides, provide voluntary programs in schools to aware the school itself and the school going children regarding the Importance of the healthy food and promote for the best-branded products consumptions that do not contain unhealthy ingredients within the products.

## V. FUTURE SCOPE

The rapid expansion of middle-class populations worldwide is a good omen for fast food brands. There is a change in dietary patterns and eating habits; modern consumers are looking for time and quality. Food and drink are among the various sectors that have been severely affected by the accelerated lifestyle of modern consumers, especially the millennials. To work together, fast food brands are in line with changing consumer trends. Today, the fast-food sector is famous around the world, and the future certainly looks promising right now. Global fast-food consumption has grown by leaps and bounds over the years, creating many opportunities for fast food brands. The increase in estimated spending and a growing preference for fast food has been reflected in the global fast-food market. Besides, factors such as the increase in tourism and the recovery of the global economy are also partly driving global fast-food sales. Therefore, this research will be useful for the manufacturer, government, consumers and people who care about health to stay healthy and to be healthy.

**Conflict of Interest.** The author declares that there is no conflict of interest.

## ACKNOWLEDGEMENTS

The author acknowledges the support of the parents who responded to fill the questionnaire to complete this study. Moreover, thanks to Dr Salah Abunar (Vice-Rector of UBT) for their motivational drive provided to me, Dr Hatem Akeel (Dean of CBA) and Dr Hatem Garamoun (Head of the marketing department) for their cooperation whenever looked-for to complete the task.

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**How to cite this article:** Alam, Mohammad Zulfeeqar (2020). Children's Predilections Concerning the Fast-Foods/Junk- Foods in Saudi Arabia. *International Journal on Emerging Technologies*, 11(1): 108-113.