

Original Article

Fast Food Intake Frequency among Young Generation during COVID-19 Pandemic in Selected Area of Dhaka City

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Abstract

Introduction: Fast food is energy dense food with a high amount of refined sugar, wheat, flour, trans-fat, polyunsaturated fat, salt, numerous additives and low nutrient value in terms of protein, fiber, vitamins and mineral content. The nationwide lockdown due to COVID-19 forced people to stay at home for a prolonged period associated with anxiety, and boredom caused by home confinement influenced to change in lifestyle patterns, reduction diet quality and promote overconsumption.

Objective: The study aimed to observe the frequency of junk food consumption among the young generation (15-25 years old) during the COVID-19 Pandemic and compare the change of before and during COVID-19 situation.

Methods & materials: It was a cross-sectional study conducted in different area of north and south city corporation in Dhaka city focusing on the young generation aged 15-25 years old from September 2020 to April 2021. Total sample size was 315 and the sample was selected randomly following the inclusion and exclusion criteria. The data was collected from the participant through Online Google Form due to of pandemic issue.

Data Analysis: Collected data was coded and analyzed by using SPSS for Windows, version 20 (SPSS Inc., Chicago, IL, USA). The statistical significance of difference between values was assessed by chi-square test. A probability level of 0.05 or less significant.

Result: The study had found out among the 3-age category from 19-22 years preferred fast food more (64.78%) than others during the pandemic period ($p=0.04$). Male were taking fast food more than female. Female had increased fast food consumption 12.35% than before and male had increased 15.27% than before ($p<0.01$). That significantly stated male participants were more influenced by the Pandemic towards fast food. And a significant weight gain (57.14%) was noticed among the 19-22 years age participants, 32.4% male informed to gain weight more than 4kg and 37.4% female 1-2 kg during that period. The physical activity level was significantly ($p<0.01$) dropped during the Pandemic both in male and female participants.

Conclusion: The study exposed during pandemics people were taking fast food relentlessly more (13.81%) than normal period. But in spite of attempting to cut down the unhealthy habit of taking fast food, they couldn't make it totally because of their slothful life and being quarantine in a long period in the home.

Keywords: Overweight, Obesity, Pandemic, Adolescence, BMI

Introduction:

Fast food term refers to fast food which are easy to make and quick to consume was first entitled by 1972 by

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Michael Jacobson, Director of the Centre for Science, Washington D.C.¹ Foods like chips, chocolate, soft drinks etc. are generally taken as fast food.² Many Asian countries are undergoing rapid economic and social change, resulting in radical shifts in dietary patterns and lifestyle habits.^{3,4} The South East Asia and Western Pacific regions are currently facing an epidemic of diseases associated with obesity diabetes and cardiovascular diseases (CVD).^{4,5} India has the highest number of people with diabetes in the world and China occupies the second position.⁶ The World Health Organization itself describes an escalating global epidemic of overweight and obesity- „Globesity' taking over many parts of the world.

Traditional dietary patterns are shifting towards western dietary patterns predominantly fast food. Fast food

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contains trans-fat that behaves like saturated fats which clog up the human arteries and cause plaque Contributing to Heart Disease and stroke symptom.⁷ Processed meats increase the risk of type 2 diabetes and Coronary Heart Disease (CHD); red meat, high fat dairy as protein sources and sodium content are linked to high risk of CHD^{3,4}. There are multifold possible mechanisms for increasing risk of cardio-metabolic outcomes associated with frequent fast-food intake may contribute to central obesity, insulin resistance and elevated blood pressure.^{3,4} According to WHO Commission on Ending Childhood Obesity (the ECHO Commission), "There is unequivocal evidence that the marketing of unhealthy foods and sugar- sweetened beverages is related to childhood obesity".⁸

Lower-income countries in Asia represent an unprecedented opportunity to the manufacturers and marketers of ultra-processed foods, fast food and sugar-sweetened beverages. From 2011 to 2016, fast-food sales grew by 113% in India, 83% in Viet Nam.⁸ A study in Mangalore India found out of their 300 participants 292(97.3%) were fast food users and 42(14.4%) consumed it every day. The majority of 192(64.36) them were introduced to fast foods through television commercials and 73(57%) developed this habit as they were bored with home made food. Parental consumption of fast foods were found to influence fast food consumption among children ($p=0.024$).⁹

A Dhaka based study on 10-16 aged school going children revealed that sedentary activities ($p = 0.014$), eating fast food (0.008) and cakes/biscuits ($p = 0.018$) were as potential determinants of overweight and obesity in the children and adolescents.¹⁰

A study in Bangladesh on 27 public and private universities and colleges had found out that among 475 youth, 50.6%, 43.7%, and 53.3% in overweight, pre-obese and obese-1 category whose were consuming fast food at least once in week. The rates of soft drinks consumption (4-6 times/week) were 40.5%, 59.2%, and 73.3% respectively.¹¹ Besides, obesity epidemic was observed among those who had not the habit of doing physical exercise. This study provides evidence of increasing trend and threat to overweight and obesity for the Bangladeshi youth.¹¹

In December 2019, an outbreak of pneumonia in Wuhan City, Hubei Province in China, latterly identified in a new beta coronavirus called SARS-CoV-2.¹² The World Health Organization (WHO) declared the outbreak of the infectious disease COVID-19 (Coronavirus Disease-2019) as

a pandemic.¹³ To slow down the transmission of the virus, the majority of countries worldwide took strong containment measures with restrictions on daily living such as home confinement, social distancing, and temporary closing of businesses, schools, and universities, and remote working.¹⁴ The Covid-19 has forced most hotels, restaurants and local food shops to shut down. However, Covid- 19 has not prevented people from eating their snacks especially middle -class people have found their alternative way to have those items as frozen foods or ready-to-cook foods. This new indoor food habit of people amid the Covid 19 induced period of staying home has fueled growth in the frozen food business. Different supermarkets and grocery stores in the capital have reported a surge in the demand for frozen foods especially: parata, chicken samosa, puri, chicken spring roll, singara, chicken sausage, chicken nuggets, and French fries.

According to super shop Meena Bazar, the sales of frozen food have increased 25-29% in the Covid-19 pandemic. "There has been a good demand for frozen food sales have increased because most hotels and restaurants are closed," said Shahin Khan, CEO of Meena Bazar. Golden Harvest is the largest producer of frozen food in the country which shares around 22% of the total market. Officials of the company said the demand for processed foods has almost doubled in pandemic times. Md Shahidullah, general manager (marketing) of Golden Harvest, said, "We are not able to produce enough products according to the demand it has increased suddenly because of the Covid-19 pandemic." Pran-RFL has a separate frozen food brand named Jhotpot. Kamruzzan Kamal, director of the marketing department of the company, said sales of frozen foods have increased 50-60%. The present study was conducted to determine the frequency of fast-food intake among the young generation during COVID-19 period and compare than the before pandemic.

Materials & Methods:

Study Place: The study was conducted at different place of north and south city corporation in Dhaka city.

Study Design: The study was cross-sectional.

Study Period: The study was conducted from September, 2020 to April, 2021.

Sample Size: Total sample size was 315.

Sampling Technique: Data was collected by using structured questionnaire that was converted to Online Google Form due to pandemic issue.

Inclusion Criteria:

1. 15 to 25 years aged young people.
2. Those who took junk food during COVID-19 Pandemic
3. Those who had internet access.
4. Those who were willing to participate in this study.

Exclusion Criteria:

1. Below 15 and above 25 years aged people
2. Those who were suffering from different major diseases such as; Hypothyroidism
3. Those who didn't have internet access

4. Those who were not willing to participate in this study.

Ethical Clearance:

Ethical clearance was obtained from Nutrition Foundation of Bangladesh, Bangladesh Breastfeeding Foundation.

Data Analysis Plan:

Collected data was coded and analyzed by using SPSS for Windows, version 16 (SPSS Inc., Chicago, IL, USA). The statistical significance of difference between values was assessed by chi-square test. A probability level of 0.05 or less was considered as significant.

Result:

Table-I
Attributions of study participants

Variables	Values	Frequency (%)
Age category	15-18 years	33 (10.50%)
	19-22 years	198 (62.90%)
	23-25 years	84 (26.70%)
Gender	Female	243 (77%)
	Male	72 (23%)
Participants prefer fast food	264 (83.8%)	
Age specific choice of fast food	15-18 years	29(10.98%)
	19-22 years	171(64.78%)
	23-25 years	64(24.24%)
Participants like soft drinks		224 (71.10%)
Age specific choice of soft drinks	15-18 years	30(13.08%)
	19-22 years	141(63.08%)
	23-25 years	53(23.84%)

Table-1 shows the basic attributes towards fast food according to age and gender of the study participants.

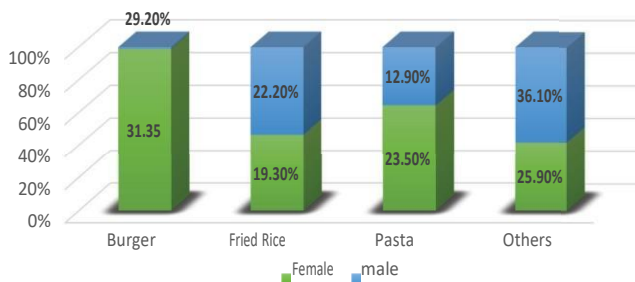


Fig-1: Status of choice of fast food according to gender

The figure shows that among all 31.35% female and 29.20 % male liked burger, 19.30% female and 22.20 % male liked fried rice, 23.50% female and 12.90% male liked pasta

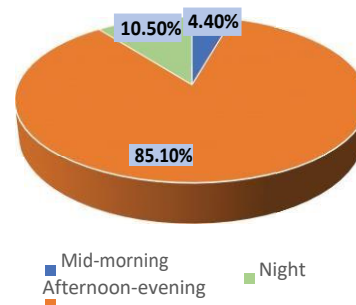


Fig-2: Usual time of consuming fast food

The figure shows that $\frac{4}{5}$ (85.10%) of participants usually like to intake fast food in the afternoon-evening period.

Table-II
Comparison of frequency of fast-food and gender before the pandemic

Fast food frequency before the Pandemic	Gender		Total	P value
	Female	Male		
2-3 times	152(62.55%)	42 (58.33%)	186 (59.05%)	0.2
4-5 times	25(10.29%)	11 (15.28%)	37 (11.75%)	
Not eating	66(27.16%)	19 (26.39%)	92 (29.20%)	
Total	243(100%)	72(100%)	315(100%)	

Table-II demonstrates before the pandemic situation 62.55% female and 58.34% male consumed fast food 2-3 times a week, was not significantly ($p=0.20$) influenced by gender.

Table-III
Comparison of consuming fast food during Pandemic between female & male participants

Fast food taking during the Pandemic	Gender		Total	P value
	Female	Male		
2-3 times	170 (70%)	44(61.12%)	214(67.94%)	<0.001
4-5 times	37 (15.2%)	20 (27.78%)	57 (18.09%)	
Not taking	36 (14.8%)	8 (11.1%)	44 (13.97%)	
Total	243(100%)	72(100%)	315 (100%)	

Table-III demonstrates, during this COVID-19 Pandemic 45.27% female and 33.33% male were taking fast food 2-3 times a week, was significantly influenced by gender.

Table-IV
Fast food consumption rate (before and during) and ordering method

Variables	Frequency (%)	
Taking fast food before Pandemic	223 (70.79%)	
Fast food intake by gender	Female	177(72.84%)
	Male	53(73.62%)
Taking fast food during Pandemic	271 (86.03%)	
Fast food intake by gender	Female	207 (85.19%)
	Male	64 (88.89%)
Making fast food in home	184 (68%)	
Ordering fast food in online	119 (43.92%)	
COVID affected vs taking fast food	13(4.13%)	

Table-IV shows the increased rate of consuming fast food during Pandemic than before according to their gender, ordering method and fast-food intake with COVID-19 affected rate.

Table-V
Weight Change and Physical Activity Level during Pandemic

Weight Change and PAL		Frequency
Weight increases overall		75(23.81%)
Weight increase by gender		
Male	More than 4 kg weight	23 (32.40%)
Female	1-2 kg weight	91 (37.40%)
Weight increase by age		
	15-18 years	13(9.78%)
	19-22 years	76(57.14%)
	23-25 years	44(33.08%)
PAL by Gender		
Female	Yes	54 (22.20%)
	No	189 (77.80%)
Male	Yes	27 (37.50%)
	No	45 (62.50%)

Table-V shows the level of weight gain and physical activity level (PAL) amid the Pandemic condition in different age group and gender.

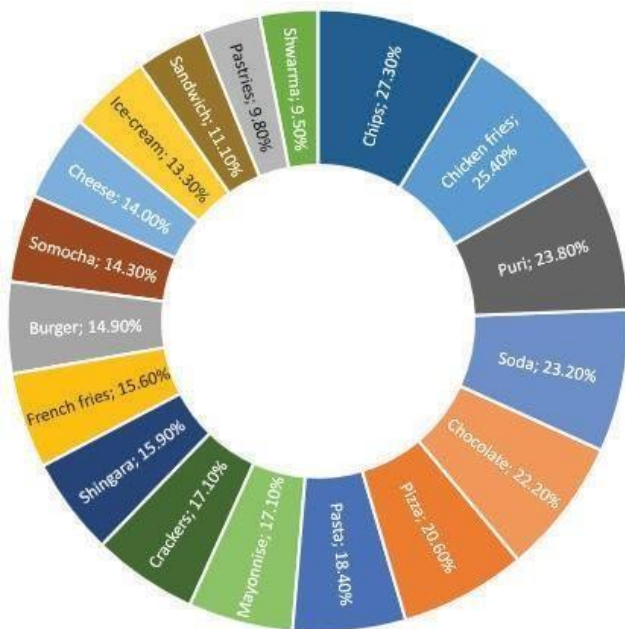


Fig-3: Distribution of consumption fast food rate during COVID-19 Pandemic

Discussion:

Among the total 315 participants 62.90% (198) were from 19-22 years aged group and female (77%) were participants predominantly in this study. Out of all 83.8% (264) preferred fast food and most of them (85.10%)

were tend to consume it as an evening snack and 71.10% (224) liked soft drinks, burger, fried rice and pasta were the most favorite fast food to them. The study had showed instead of cutting down fast food from their diet for better health participants were more frequent towards it; as in male the rate was increased 15.27% and in female 12.35% (p<0.001) The findings were similar with a study had been done in India where unhealthy dietary pattern was observed among younger patients compared to older patients (p = 0.001) and increased consumption of snacks, fried or processed foods among 24.5% were reported.¹⁵

This could be happened because of their staying home for a long period which they usually didn't and their monotonous lifestyle at home. Among the 68% (184) were making fast food at home and 43.92% (119) were reported to order from online. There was no significant (p=0.1) relation between fast food taking and COVID affectation. The participants who consumed fast food during the Pandemic, 23.81% (75) had weight In the 19-22 years age category the rate of weight was increased higher 57.14% (76) than the other 2 categories and 32.40% (23) male respondents gained more than 4kg weight and 37.40% (91) female respondents were claiming to gain 1-2 kg during this period. The study also showed some similarity with the referenced survey in India. People in India were doing less physical activity during lockdown specially among men, the rate was low likewise in Dhaka City, Bangladesh during lockdown period 62.5% (45) men and 77.80% (189) women were reported to not enact any vigorous activity. The physical

activity level was reduced almost half (41.67%) than before pandemic period specifically among men.

Since individuals with obesity and associated metabolic comorbidities such as diabetes and cardio metabolic disease were more prone to getting COVID-19 infection^{16,17} Similar findings were reported by a number of studies showing moderate levels of quarantine induced stress and anxiety in Indian adults with more than 80% adults preoccupied with fearful thoughts of getting coronavirus infection.^{18,19} But in spite of attempting to cut down the unhealthy habit of taking fast food, they couldn't make it totally because of their slothful life and being quarantine in a long period in the home. They were increased of consuming pizza 20.60%, chocolate 22.20%, soda 23.20%, puri 23.80%, chicken fry 25.40%, and chips 27.30% more than before the Pandemic that symbolize a study done in North India where CHO consumption increased by 21%, Fat 13%, Frequency of snacking increased by 23%, increased consumption of sugar among 7%.²⁰

Conclusion:

Because of the isolation period, avoiding sedentary behaviors or physical inactivity is difficult and, consequently, reduced PA and lower energy expenditure could negatively affect physical and mental health. The change in fast food consuming habit between before and after COVID are not that much significantly notable in female participants but the change is striking among male participants. They were stuck in a lethargic, monotonic life than ever before. Preparing fast food at home, ordering online, and going to a restaurant after lockdown is over symbolizes the obsession towards fast food although there was a worldwide crisis exists

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References:

1. Baskar R, Junk food: impact on health. *J Drug Deliv Ther.* 2012; 2(3):1-7
2. Kaushik JS, Narag M and Parakh A. Fast Food Consumption in children. *Indian Pediatrics* 2011; 48(2): 97-110.
3. Odegard AO, Koh WP, Yaun JM, Gross MD, Pereira MA, Western-style fast food intake and cardiometabolic risk in an Eastern country. *Circulation* 2012; 126 (2): 182-8.
4. Pan A, Malik VS, Hu FB. Exporting diabetes mellitus to Asia: the impact of western-style fast food. *Circulation* 2012; 126(2): 163-5.
5. Tabassum A, Rahman T. Differences in consumer attitude towards selective fast food restaurants in Bangladesh: An implication of multiattribute attitude model. *World Rev Bus Res* 2012; 2(3): 12-27.
6. International Diabetes Federation. *Diabetes Atlas*. 4th edition. Belgium: International Diabetes Federation, 2009
7. Younis FH, Eljamay SM. Fast Food Consumption among Teenagers aged between (13 to 25) years old and Their Effects on Health in Derna-Libya. *J Regen Biol Med.* 2019; 1(1): 1-8
8. For summaries of existing evidence, see Cairns, G., Angus, K., Hastings, G. and Caraher, M. (2013). „Systematic reviews of the evidence on the nature, extent and effects of food marketing to children: A retrospective summary“, *Appetite* 62, pp. 209-215; Boyland, E. and Tatlow Golden, M. (2017). „Exposure, power and impact of food marketing on children: Evidence supports strong restrictions“, *European Journal of Risk Regulation* 8(2), pp. 224-236.
9. Joseph N, Nelliyanil M, Rai S, Y P RB, Kotian SM, Ghosh T, Singh M. Fast Food Consumption Pattern and Its Association with Overweight Among High School Boys in Mangalore City of Southern India. *J Clin Diagn Res.* 2015 May; 9(5): LC13-7.
10. Alam MM, Hawlader MDH, Wahab A, Hossain MD, Nishat SA, Zaman S, Ahsan GU. Determinants of overweight and obesity among urban school-going

- children and adolescents: a case-control study in Bangladesh. *Int J Adolesc Med Health*. 2019 May 9;33(1). doi: 10.1515/ijamh-2018-0034. PMID: 31075080.
11. Muktadir M.H.A., Islam M.A., Amin M.N., Ghosh S., Siddiqui S.A., Debnath D., Islam M.M., Ahmed T., Sultana F., Nutrition transition - Pattern IV: Leads Bangladeshi youth to the increasing prevalence of overweight and obesity, *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, Volume 13, Issue 3, 2019, Pages 1943-1947, ISSN 1871-4021,
 12. Rabi, F.A.; Al Zoubi, M.S.; Kasasbeh, G.A.; Salameh, D.M.; Al-Nasser, A.D. SARS-CoV-2 and coronavirus disease 2019: What we know so far. *Pathogens* 2020, 9, 231. [CrossRef] [PubMed]
 13. World Health Organization. WHO Director-General's Opening Remarks at the Media Briefing on COVID-19-11 March 2020. Available online: <https://www.who.int/dg/speeches/detail/who-director-generals-opening-remarks-at-the-media-briefing-on-covid-19-11-march-2020>
 14. Maliszewska, M.; Mattoo, A.; Van Der Mensbrugghe, D. The Potential Impact of COVID-19 on GDP and Trade a Preliminary Assessment; Policy Research Working Paper, No. 9211; The World Bank: Washington, DC, USA, 2020.
 15. Rawat D., Dixit V., Gulati S., Gulati S., Gulati A., Impact of COVID-19 outbreak on lifestyle behaviour: A review of studies published in India, *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, Volume 15, Issue 1, 2021, Pages 331-336, ISSN 1871-4021,
 16. Ghosh A., Arora B., Gupta R., Anoop S., Misra A. Effects of nationwide lockdown during COVID-19 epidemic on lifestyle and other medical issues of patients with type 2 diabetes in north India. *Diabetes & Metabolic Syndrome. Clin Res Rev*. 2020;14(5):917-920.
 17. Ranjan P., Kumar A., Chowdhury S., Pandey S., Choudhary A., Bhattacharya A. *Clinical Research & Reviews*; 2020. Is excess weight a risk factor for the development of COVID 19 infection? A preliminary report from India. *Diabetes & Metabolic Syndrome*.
 18. Rehman U., Shahnawaz M.G., Khan N.H., Kharshiing K.D., Khursheed M., Gupta K. Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Ment Health J* 2020.
 19. Roy D., Tripathy S., Kar S.K., Sharma N., Verma S.K., Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian J Psychiat*. 2020;51
 20. Ghosh A., Arora B., Gupta R., Anoop S., Misra A., Effects of nationwide lockdown during COVID-19 epidemic on lifestyle and other medical issues of patients with type 2 diabetes in north India, *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*, Volume 14, Issue 5, 2020, Pages 917-920, ISSN 1871-4021