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Impact of online foods on dietary habits and nutritional status of adulthood

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Abstract

In today's digital era, the convenience and creativity of online food delivery have transformed how young adults receive meals, resulting in significant changes in their eating habits and nutritional status. This study investigated the variables that impact the usage of OFDS. This study used a cross-sectional, quantitative approach to gather and evaluate data from 200 young people in Varanasi, Uttar Pradesh. The data was analyzed using the SPSS statistical software (version 22.0), with a significance threshold of $p < 0.05$. The study observed that the significant level of fast-food consumption is high. 6% of respondents choose nutritious and healthy food items every time. Chi-square was used to determine the relationship between the frequency of OFDS and changes in dietary habits as well as nutritional status. The study found a significant relationship between dietary habits and the frequency of ordering online foods but There is no statistical relationship between nutritional status and frequency of ordering online foods at a significance level of 0.27, which is more than the p -value > 0.05 .

Keywords: Online foods, food preferences, dietary habits, nutritional status

Introduction

Young adulthood, a developmental stage from ages 18 to 25, is a crucial period for self-exploration and identity-building (Higley., 2019) ^[5]. This cohort is also the primary consumer group for e-commerce, significantly influencing the online food delivery services (OFDS) market (Li *et al.*, 2022) ^[8]. In today's digital age, the convenience and innovation of online food delivery have reshaped how young adults obtain meals, resulting in notable changes in their dietary habits and nutritional health (Leung *et al.*, 2023) ^[7].

Online food ordering can refer to the process of getting food from local restaurants and other food cooperatives using a smartphone application or an online portal. This type of meal delivery is growing in popularity, especially among the younger generation, who resort to mobile food ordering applications, changing how food is delivered and picked up. OFDS has a significant impact on dietary patterns, which are described as regular food and nutrient intake practices (Omaga & Omuemu., 2018) ^[10]. The convenience of access to a wide range of foods via delivery apps has resulted in increasing intake of calorie-dense, nutrient-poor foods, negatively impacting young adults' nutritional health. Nutritional status, as measured by anthropometric indices such as BMI, shows the balance of nutritional intake and use.

According to research, young individuals are more vulnerable to bad eating habits, frequently choosing "junk food" owing to convenience and a lack of nutritional understanding (Omaga & Omuemu, 2018) ^[10]. The prevalence of OFDS contributes to this movement toward unhealthy eating, contributing to poor nutritional status defined as under or over-nutrition (Bede *et al.*, 2020) ^[2].

BMI is used to determine nutritional status, categorizing individuals as underweight, normal weight, overweight (pre-obesity), or obese (Budzyński *et al.*, 2022) ^[3]. Poor eating habits promoted by OFDS might result in weight increase, raising the risk of chronic illnesses such as hypertension, diabetes, and cardiovascular disease (Khanna *et al.*, 2022) ^[6]. Researchers found that Hamid *et al.*, (2024) found a significant connection between regular usage of online food delivery and high BMI. This shows that there might be an association between online meal delivery and BMI. The individuals' high BMI may be attributable to their fast-food intake, as it was the most requested food in this research.

Oliveira & Raposo (2024) ^[9] observed that there was also a positive relationship between body mass index and age, as well as body mass index and fast-food consumption. Some research revealed a substantial link between fast foods and beverages and nutritional status.

Reasons to Order Food Online

Several factors motivate young people to use OFDS, including convenience, diversity, and the impact of demanding schedules. OFDS enables fresh and convenient meals at home or work, making it appealing to individuals with hectic schedules or who live away from home in hostels or shared lodgings (Eu & Sameeha., 2021, Srivastava *et al.*, 2021) ^[4, 12]. OFDS is an appealing alternative due to its simplicity of ordering and availability of varied cuisines, but it typically comes at the expense of better eating habits.

Young adults' increased dependence on online meal delivery services has had a substantial impact on their eating habits and nutritional health. The convenience and variety provided by OFDS have increased the consumption of unhealthy, calorie-dense meals, resulting in poor nutritional status and increased risk of chronic illnesses. Osaili *et al.*, (2023) ^[11] observed that 57.6% of participants reported increased food intake and appetite via OFD applications, whereas 57.8% reported changes in eating behaviors due to these apps. Approximately one-third of participants did not order a healthy side dish while using OFD apps. Understanding the varied impact of OFDS on young adults' dietary habits is crucial for developing strategies to encourage healthier choices and improve their nutritional status in modern times. By addressing the benefits and drawbacks of online meal delivery, we can help young adults create better eating habits and live healthier lives.

Methodology

This study used a cross-sectional research approach in Varanasi, Bhu, from December to May 2024, focusing on 200 young adults aged 18 to 25. The sample was estimated

using a chi-square chart and purposive sampling. The main technique used was the questionnaire, which collected demographic information, anthropometric assessment, and dietary habits using a food frequency questionnaire (FFQ). The data was collected through personal interviews and questionnaires from sources. The study used SPSS software for statistical analysis, utilizing frequency, percentage, and chi-squared tests to analyze the data. The results were categorized into various categories based on BMI, which is a key indicator for nutritional status evaluation.

Body mass index (BMI) is commonly utilized as a primary screening indicator for nutritional status evaluation (Budzyński *et al.*, 2022) ^[3]. According to WHO, BMI, originally known as the Quetelet index, is a measure of nutritional status in humans. It is calculated as a person's weight in kilograms divided by the square of their height in meters (kg/m²).

The Formulae use-

$$\text{BMI} = \frac{\text{Weight in Kilogram}}{(\text{Height in metre})^2}$$

According to WHO (2010), For adults over 20 years old, BMI falls into one of the following categories.

BMI	Nutritional status
Below 18.5	Underweight
18.5-24.9	Normal weight
25.0-29.9	Overweight
30.0-34.9	Obesity class I
35.0-39.9	Obesity class II
Above 40	Obesity class III

Results

In this survey, the results show that 14.50% of respondents are underweight, 63.50% of the respondents have normal weight, 18.50% of respondents are overweight and the rest of the respondents fall into categories of obesity.



Fig 1: Distribution of the respondents according to times and order of food from an online platform.

This figure shows that 14.50% of respondents order food multiple times a week, 15.50% of respondents order food

once a week, 37% of respondents order occasionally, and 33% of respondents order food rarely from online platforms.

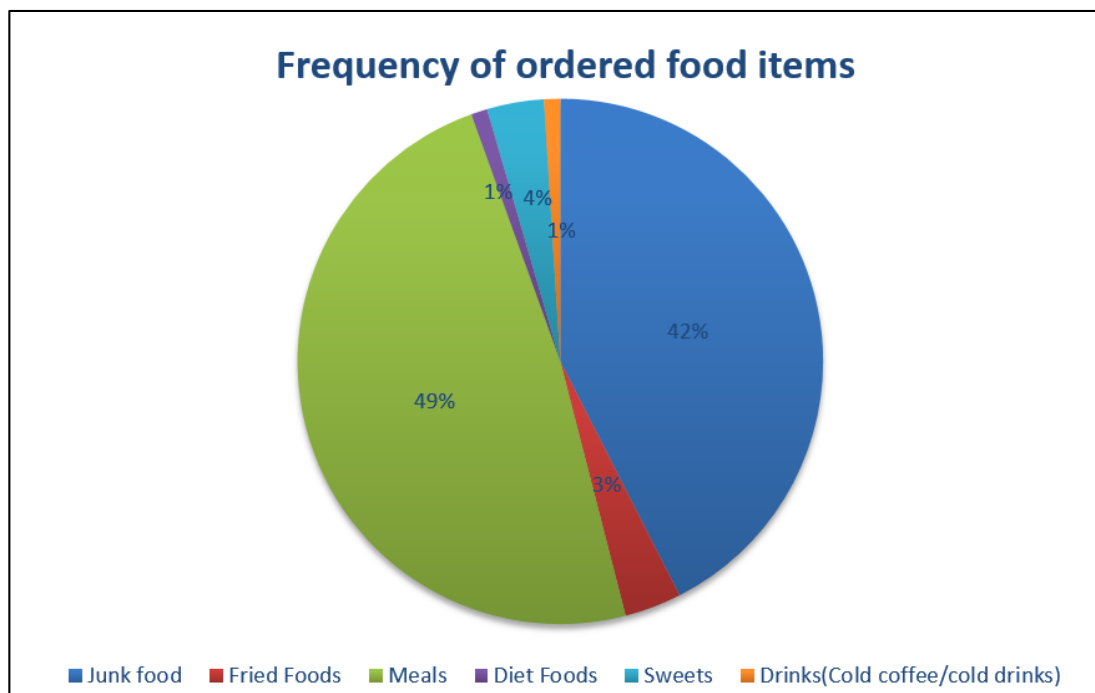


Fig 2: Distribution of the respondents according to order most frequently items from an online platform.

This Fig shows that 42.5% of respondents order Junk food like burgers, Pizza, and French fries, etc.; 3.5% of respondents order fried foods, 48.5% of respondents order meals (Indian, Chinese, and South Indian), 1% of

respondents order diet foods, 3.5% of respondents order sweets (pastry/cake/sweets); and 1% of respondents order drinks like cold coffee, cold drinks, or any other drinks.

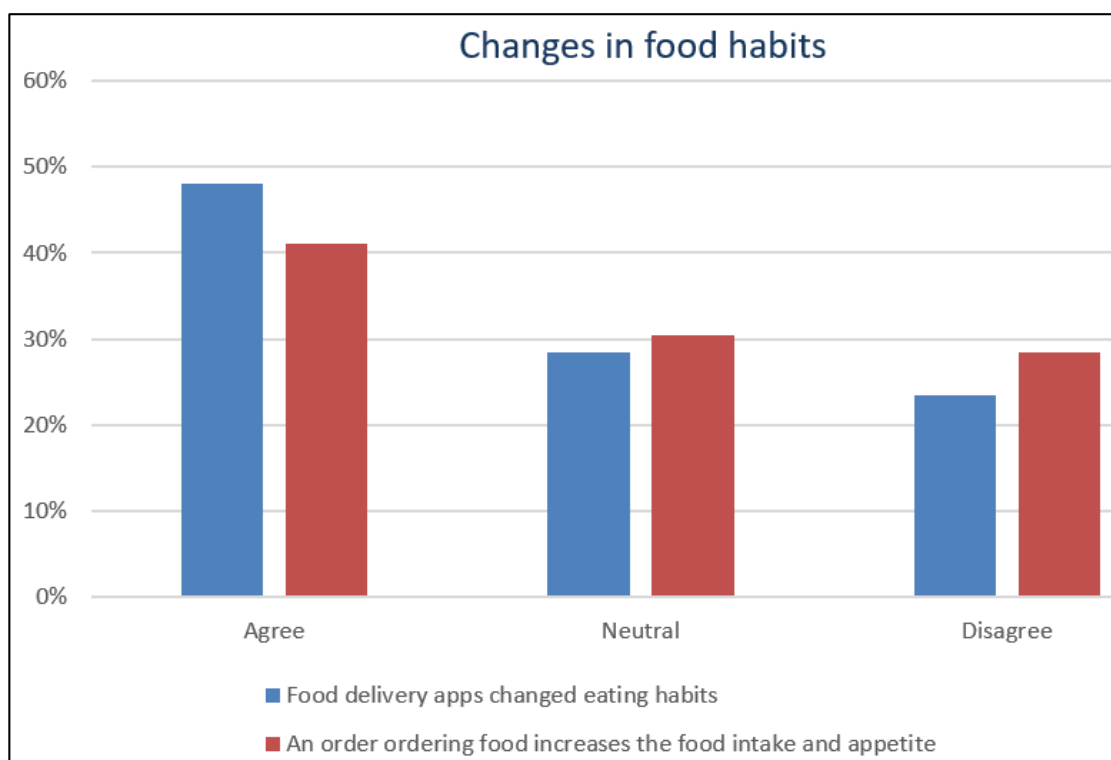


Fig 3: Distribution of respondents whose eating habits (having late-night meals or eating alone) increased their food intake and appetite.

The above table shows that 48% of respondents changed their eating habits, 28.5% of respondents felt neutral, and 23.5% of respondents disagreed with changing their eating habits through online foods.

Another result shows that 41% of respondents agreed with increased food intake and appetite, 30.5% felt neutral, and 28.5% disagreed with changing the amount of food intake and appetite.

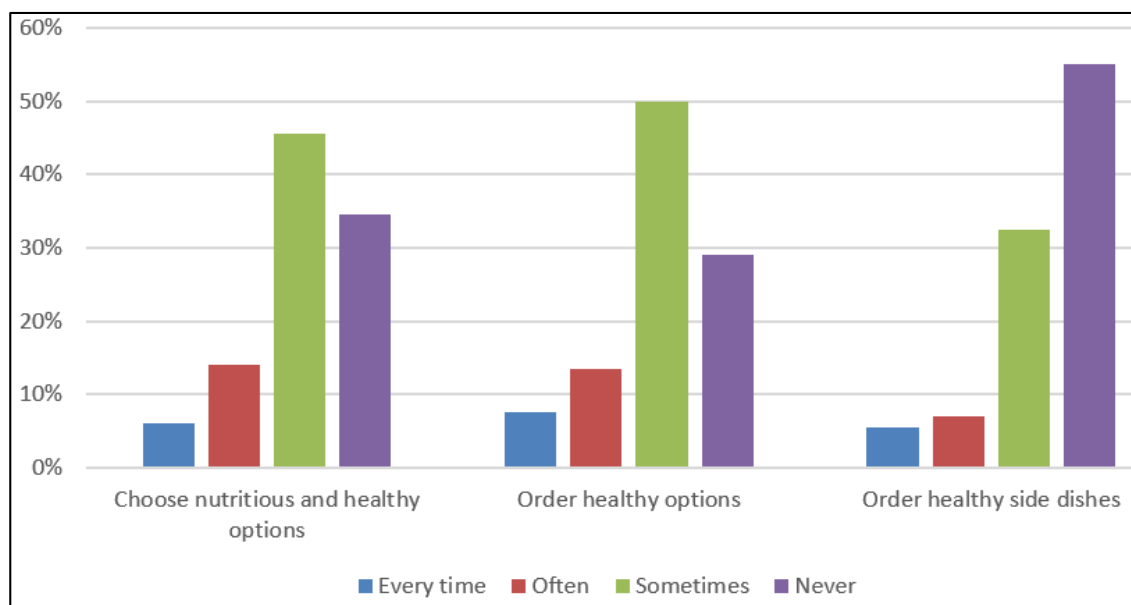


Fig 4: Distribution of respondents ordering nutritious & healthy food items, Ordering healthy options and healthy side dishes.

The above graphs show that 6% of respondents choose nutritious and healthy food items, 14% of respondents choose often, 45.5% of respondents choose sometimes and 34.5% of respondents never choose nutritious foods.

The 2nd result shows, 7.5% of respondents ordered every time healthy options, 13.5% of respondents often chose, 50.0% of respondents ordered sometimes and 29% of respondents never ordered healthy options.

Another result shows that the frequency of different food groups:

The graph shows the distribution of food groups consumed by respondents through online food delivery platforms. 99% never consumed cereals, while 47.5%, 47.5%, 42.5%, 49.0%, 52.0%, 100%, 41.5%, 53.5%, and 49.0% never consumed pulses, green leafy vegetables, roots and tubers, fruits, eggs, meat products, milk and milk products, fats and oils, sugar, nuts, and dry fruits. Most of the participants order fast food. The study's meal frequency questionnaire revealed a significant intake of fast food. The respondents ordered fast foods in 1-3 days/month, and they preferred main course veg ordered in 2-4 days/week.

Table 1: Distribution of participants according to food delivery platforms changed their dietary habits based on the frequency of ordering online foods.

Frequency of ordering online food	Ordering online foods changed their dietary habits				
	Agree N (%)	Neutral N (%)	Disagree N (%)	Test statistic	p-Value
Multiple times a week	26 (27.08)	5 (8.77)	16(34.04)	$\chi^2 = 16$	0.014
Once a week	28 (29.16)	14(24.56)	12(25.53)		
Occasionally	25 (26.04)	14 (24.56)	13(27.65)		
Rarely	17(17.70)	24 (42.10)	6(12.76)		

In the above table, the result shows that most of them agree that their dietary habits change from online foods. The respondents who ordered multiple times a week and once a week mostly agreed that their dietary habits changed from

ordering online foods. It is statistically significant that ordering online foods changed their dietary habits and frequency of ordering online foods at a significance level of 0.014, which is less than $p < 0.05$.

Table 2: The distribution of respondents according to online ordering food increased the food intake and appetites based on the frequency of ordering online foods.

Frequency of ordering online food	Ordering online foods increases the food intake and appetite			Test statistic	p-Value
	Agree N (%)	Neutral N (%)	Disagree N (%)		
Multiple times a week	17(20.83)	12 (19.67)	8(14.03)	$\chi^2 = 13.08$	0.042
Once a week	24(29.36)	16 (26.22)	15(26.31)		
Occasionally	28 (34.14)	11(18.03)	12(21.05)		
Rarely	13 (15.5)	22(36.06)	22 (38.5)		

In the above table, the result shows that respondents who ordered once a week and occasionally increased their food intake and appetite due to OFDS compared to those who rarely ordered online foods. There is a significant difference between food delivery platforms changing food intake or appetites and frequency of ordering online foods at a

significance level of 0.042, which is less than $p < 0.05$. These results support another research, by Osaili *et al.* (2023) ^[11] more than half of the participants agreed that OFD apps had increased their food intake and appetite, and similarly, respondents agreed that their dietary habits changed due to ordering online foods.

Table 3: Distribution of respondents according to nutritional status based on the frequency of ordering online foods.

Frequency of ordering online food	Nutritional status						Test statistic	p-Value
	Underweight	Normal	overweight	Obese class I	Obese Class II	Obese class III		
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)		
Multiple times a week	4 (13.79)	23(18.1)	9(24.32)	1(20)	0(0)	0(0)	$\chi^2 = 17.31$	0.27
Once a week	10(34.48)	33(25.9)	9 (24.32)	3(60)	0(0)	0(0)		
Occasionally	6(20.68)	29(20)	14 (37.83)	1(20)	0(0)	1(100)		
Rarely	9(31.03)	42(33)	5(13.5)	0(0)	1(100)	0(0)		

In the above table, the result shows that most respondents who order online foods all have normal weight. There is no significant relationship between nutritional status and frequency of ordering online foods at a significance level of 0.27, which is more than the p-value (>0.05). This result is supported by Keeble *et al.*, (2020) discovery that there is no association between online foods and nutritional status. But this result is contrary to the Hamid, (2024) Chi-square test applied to the association between the BMI and frequency of OFDS and they found that there is a relationship between the BMI and OFDS.

Conclusion

The study concluded that online meal delivery platforms considerably affect nutritional habits, leading to an increasing preference for unhealthy and convenience food items over healthful food items. They don't prefer healthy options or any side dishes. Due to the choice of unhealthy foods, and fats foods they usually suffer from food allergies, and indigestion. Despite these changes, there was no significant impact on the overall nutritional status of the respondents in the current study. The findings highlight the need for awareness and interventions to promote healthier eating habits amidst the growing reliance on online food delivery services.

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Reference

- Ahmad A, Batool I, Noor G, Ashraf F, Samanual S, Ameen S, *et al.* Assessment of dietary pattern and nutritional status of BScN 4 year nursing students at a private nursing college Lahore. Saudi Journal of Nursing and Health Care. 2022;5:203-212. doi:10.36348/sjnhc.2022.v05i09.005.
- Bede F, Cumber SN, Nkfusai CN, Venyuy MA, Ijang YP, Wepngong EN, *et al.* Dietary habits and nutritional status of medical school students: the case of three state universities in Cameroon. The Pan African Medical Journal. 2020;35:15. doi:10.11604/pamj.2020.35.15.18818.
- Budzyński J, Szukay B. BMI as a biomarker in patients' nutritional assessment. 2022. doi:10.1007/978-3-031-07389-2_36.
- Eu EZR, Samecha MJ. Consumers' perceptions of healthy food availability in online food delivery applications (OFD Apps) and its association with food choices among public university students in Malaysia. Frontiers in Nutrition. 2021;8:674427. doi:10.3389/fnut.2021.674427.
- Higley E. Defining young adulthood. DNP Qualifying Manuscripts. 2019;17.
- Khanna D, Peltzer C, Kahar P, Parmar MS. Body mass index (BMI): a screening tool analysis. Cureus. 2022;14(2):e22119. doi:10.7759/cureus.22119.
- Leung YL, Chan RL, Chiu DK, Ruwen T. Investigating the consumption behavior of young adults using online food delivery platforms during the COVID-19 pandemic. Aslib Journal of Information Management. 2023. doi:10.3390/ijerph192215267.
- Li Y, Yao P, Osman S, Zainudin N, Sabri MF. A thematic review on using food delivery services during the pandemic: insights for the post-COVID-19 era. International Journal of Environmental Research and Public Health. 2022;19(22):15267. doi:10.3390/ijerph192215267.
- Oliveira L, Raposo A. Factors that most influence the choice for fast food in a sample of higher education students in Portugal. Nutrients. 2024;16:1007. doi:10.3390/nu16071007.
- Omage K, Omuemu VO. Assessment of dietary pattern and nutritional status of undergraduate students in a private university in southern Nigeria. Food Science & Nutrition. 2018;6:1890-1897.
- Osaili TM, Al-Nabulsi AA, Taybeh AO, Cheikh Ismail L, Saleh ST. Healthy food and determinants of food choice on online food delivery applications. PLoS ONE. 2023;18(10):e0293004.
- Srivastava R, Atri M, Pareek S, Chadha M, Sharma A. Poor dietary habits: a function of online food delivery fad among medical and dental college students in India. Journal of Lifestyle Medicine. 2021;11(2):74-81. doi:10.15280/jlm.2021.11.2.74.