

Impact of FDA on Dietary Habits among Urban College Students

Prathvi¹, Dustitha.P², Nida Musarath³ Dr. Neeta Pattan⁴

^{1,2,3}PG Scholars Department of Food Science and Nutrition, School of Home Science, Maharani Cluster University Palace Road, Bangalore-01, Karnataka, India.

⁴Associate Professor, Department of Food Science and Nutrition, School of Home Science, Maharani Cluster University Palace Road, Bangalore-01, Karnataka, India.

Abstract:

Food delivery apps (FDA) have become a common part of modern lifestyles, especially among adolescents and young adults. Apps such as Swiggy, Zomato, and Domino's make it easy as to order a food from a wide range of restaurants and get it delivered to the doorstep. The convenience, attractive offers, and variety of options have changed consumers eating habits. Regular use of FDA may lead to unhealthy food choices, irregular meal timings, and higher intake of high- calorie foods which can affect the nutritional status of students.

Aim: The study aimed to assess impact of FDA on dietary habits among urban college students

Methodology: A total of 300 college students from educational institutions in Bangalore, Karnataka, were selected using purposive sampling. A descriptive cross-sectional research design was used. Data were collected using a self-structured and validated questionnaire covering socio-demographic details, FDA usage, food habits. The data were analysed using appropriate descriptive and inferential statistical methods.

Results: The study found that the majority of respondents regularly used FDA with Swiggy (38.0%) and Zomato (31.3%) were the most commonly used FDA. Majority of students ordered food once a month or less than a month (56.0%), followed by 2-3 times a month (21.3%) mainly due to convenience, taste preference, discounts or offers on FDA and lack of time. Students who used FDA more often were more likely to eat high calorie foods, skip regular meal timings, and consume fewer fruits and vegetables.

Conclusion: The study concludes that FDA had a clear influence on the food habits of college students and may contribute to unhealthy eating behaviour, affecting their nutritional status. Promoting nutrition education, healthy food choices, and responsible use of FDA can help students develop healthier food habits and improve overall nutritional well-being.

Keywords: Food delivery apps, Food habits, Nutritional status, Body Mass Index, Dietary habits.

INTRODUCTION

Food delivery apps (FDA) have become an important part of today's digital food environment, especially among college students. The growing use of smartphones and easy internet access has made it simple for students to order food anytime through platforms such as Swiggy and Zomato. These apps are popular because they save time, offer a wide variety of food choices, and provide quick doorstep delivery, making them suitable for students with busy academic schedules (Shukla & Deshpande, 2024). Several features

of FDA including attractive menus, customer reviews, easy to use interfaces, discounts, cashback offers, free delivery, loyalty rewards encourage students to order food more frequently. These benefits increase the convenience of online food ordering and influence students food preferences and purchasing decisions. (Chakraborty et al., 2024; Vaidya et al., 2025). Although FDA provide convenience and flexibility, frequent use may lead to unhealthy dietary habits. Students may consume more energy-dense foods, eat fewer fruits and vegetables, and develop irregular meal patterns. Overtime, these dietary behaviours may negatively affect their nutritional status and increase the risk of overweight, obesity, and other lifestyle related health problems. Therefore, it is important to understand how the use of FDA influences student's food habits and nutritional status. (Zhang et al., 2024).

MATERIALS AND METHODS

The study was conducted during the year 2025–2026 among college students aged 16–23years studying in selected colleges. A total of 300 students were selected using a convenient sampling technique. The study was planned and carried out at Smt. VHD Central Institute of Home Science [Maharani Cluster University], Vani Vilas Govt. P.U college Bengaluru. The research included UG, PG, PU students aged 16– 23 years who regularly use FDA such as Swiggy, Zomato, and other online food ordering platforms. Students who did not use FDA, those with a background in nutrition and dietetics, and those unwilling to participate were excluded from the study. The questionnaire was constructed and developed by referring to previously published literature and validated questionnaires related to FDA usage, food habits, and nutritional status. The questionnaire was reviewed and validated by subject experts and a statistician to ensure its content validity and reliability. A semi-structured questionnaire consisting of both close-ended and open-ended questions was used to obtain comprehensive and reliable information from the participants. The questionnaire was divided into different sections, namely socio-demographic profile, FDA usage pattern, food habits, lifestyle practices and social life. Data were collected after obtaining informed consent from the participants and permission from the respective institutions. The purpose of the study was explained to all participants, and confidentiality of the information provided was assured. The collected data were compiled, coded, and statistically analysed using frequency, percentage, chi-square test, one-way ANOVA, and descriptive statistics with the help of IBM SPSS Statistics Version 29.0 software.

RESULTS AND DISCUSSION

Table 1: Socio demographic profile of the respondents (N = 300)

Socio demographic parameters		Number	%
Age	16-23 years	300	300.0
Marital status	Single	287	95.6
	Married	13	6.5
Educational qualifications	Postgraduate	100	33.3
	Undergraduate	100	33.3
	Pre-University	100	33.3
Family income (Monthly)	< ₹1412	45	15.0
	₹1412 – ₹2823	29	9.7
	₹2823 – ₹4706	101	33.7
	>₹4707 – ₹9413	70	23.3

	>₹9413	55	18.3
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Table 1 presents the majority of the respondents (95.6%) were single, while only (6.5%) were married. Equal proportions of the respondents (33.3%) had completed pre-university, undergraduate and postgraduate education. With regard to monthly family income, the majority of the respondents (33.7%) belonged to the income group of ₹2,823–₹4,706, followed by (23.3%) belonging to the ₹4,707–₹9,413 income group.

The findings are in agreement with the study conducted by Sharma and Jhamb (2023), who reported that the majority of food delivery app users were unmarried college students belonging to middle-income families. Similarly, Gupta and Duggal (2023) observed that young adults pursuing higher education constituted the largest group of food delivery app users because of their busy academic schedules and greater dependence on online services. The present study also reflects a similar demographic profile, indicating that young female students are the predominant users of FDA.

Table 2: Usage of FDA (N = 300)

	Number	%
a) Frequency of usage of FDA		
Daily	9	3.0
2-3 times a month	64	21.3
2-3 times a week	28	9.3
Once a month or less	168	56.0
Once a week	31	10.3
b) Most commonly used FDA		
Zomato	94	31.3
Dunzo	17	5.7
Swiggy	114	38.0
Uber eats	73	24.3
Any other	2	0.7

Table 2 presents the majority of the respondents (56.0%) used FDA once a month or less, followed by (21.3%) who used them two to three times a month. The least proportion of the respondents (3.0%) reported using FDA on a daily basis. Among the FDA, Swiggy (38.0%) was the most preferred apps, followed by Zomato (31.3%) and any other (0.7%)

The present findings are in accordance with the study conducted by Reddy and Kumar (2023), who reported that college students generally preferred occasional use of FDA rather than daily use. The authors also observed that Swiggy and Zomato were the leading food delivery platforms because of their user-friendly interface, quick delivery services, attractive discounts and a wide range of food choices. Similarly, the present study indicates that students preferred these applications because of convenience and accessibility, while daily dependence on FDA remained comparatively low.

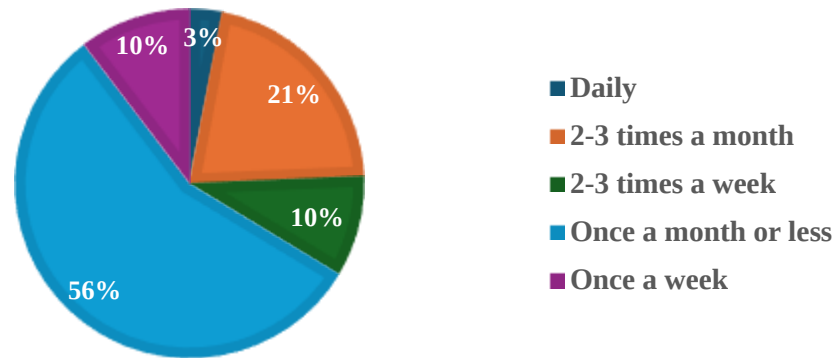


Fig 1 (a): Frequency of usage of FDA

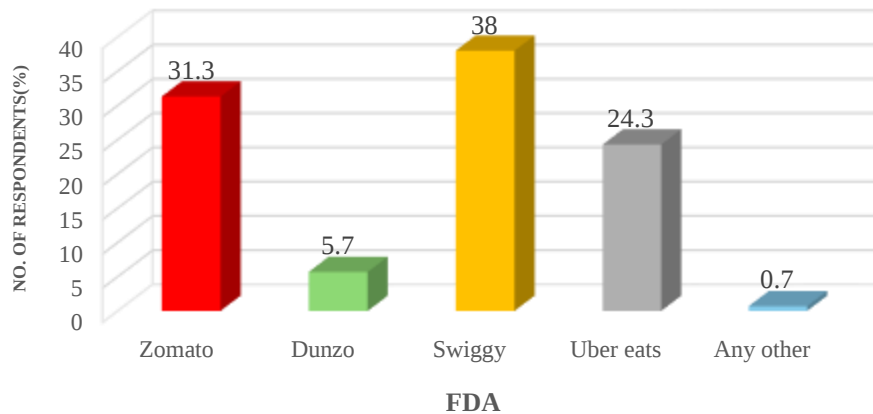


Fig 1 (b): Most commonly used FDA

Table 3: Reasons for using FDA (N = 300)

	Number	%
a) Influencing the choice of FDA		
Speed of delivery	88	29.3
Ease of use	42	14.0
Availability of discounts	39	13.0
Customer reviews	27	9.0
Variety of food options	104	34.7
b) Reasons for using FDA		
Lack of time to cook	31	10.3
Promotion	15	5.0
Craving specific food	196	65.3
Discounts	24	8.0
Variety of options	34	11.3

Table 3 presents the majority of the respondents (65.3%) reported craving for specific food as the main reason for using FDA, followed by variety of food options (11.3%) and lack of time to cook (10.3%).

While selecting a food delivery application, the majority of the respondents (34.7%) preferred applications offering a wide variety of food choices, followed by speed of delivery (29.3%).

These findings are similar to those reported by Gupta and Duggal (2023), who found that food cravings, convenience and availability of diverse food choices were the major reasons influencing online food ordering behaviour among young adults. Likewise, Nguyen et al. (2025) reported that convenience and food variety significantly increased the preference for online food delivery platforms among university students. The present study also highlights that convenience and food preferences play an important role in encouraging the use of FDA.

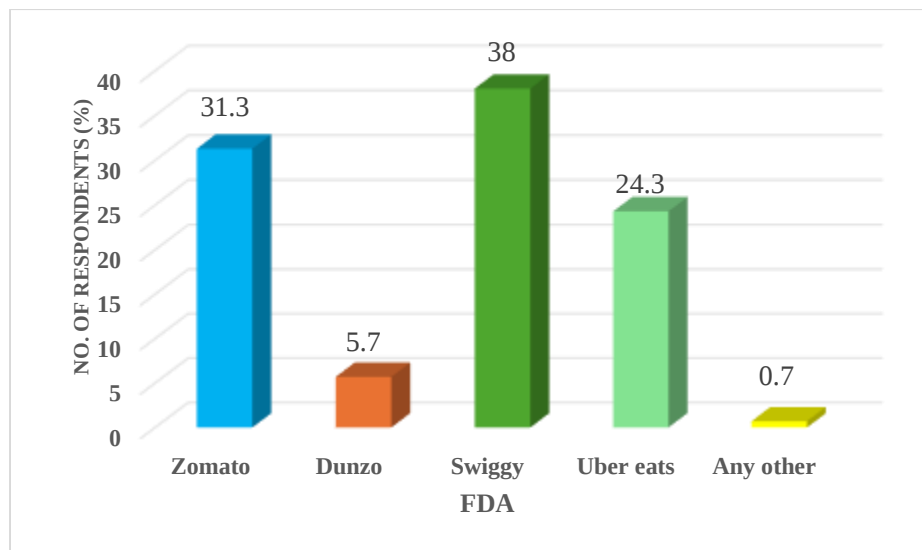


Fig 3 (b): Reason for using FDA

Table 4: Expenses towards using FDA (N = 300)

	Number	%
a) The average amount spent per order on FDA		
Under 200	106	35.3
₹200 – ₹500	108	36.0
₹500 – ₹800	25	25.0
₹800 and above	20	6.7
b) Amount spent per month on FDA		
Under ₹500	173	57.7
₹500 – ₹1500	103	34.3
₹1500 – ₹3000	23	7.7
₹3000 and above	1	0.3

Table 4 presents the majority of the respondents (36.0%) spent between ₹200 and ₹500 on a single food order, followed by (35.3%) who spent less than ₹200. With regard to monthly expenditure, the majority of the respondents (57.7%) spent less than ₹500 per month on FDA, while 34.3 percent spent between ₹500 and ₹1,500.

These findings are in accordance with the study conducted by Ali et al. (2024), who observed that most university students had relatively low monthly expenditure on FDA due to limited disposable income. The

authors further reported that students generally preferred affordable meal options and frequently utilized promotional discounts to reduce food expenses. Similarly, the present study indicates that respondents maintained moderate spending patterns while using FDA, reflecting economical food purchasing behaviour among students.

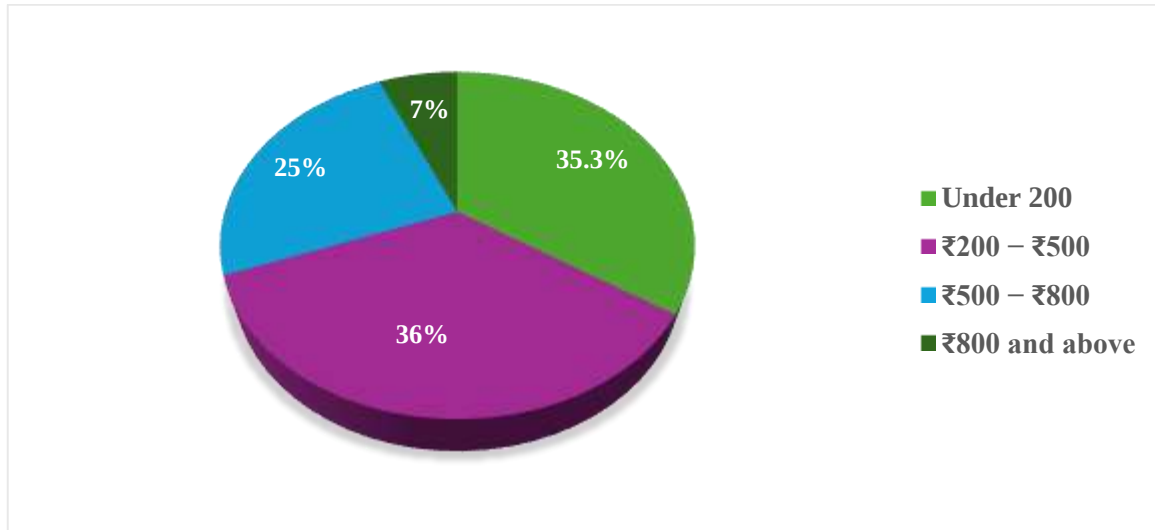


Fig 4 (a): The average amount spent per order on FDA

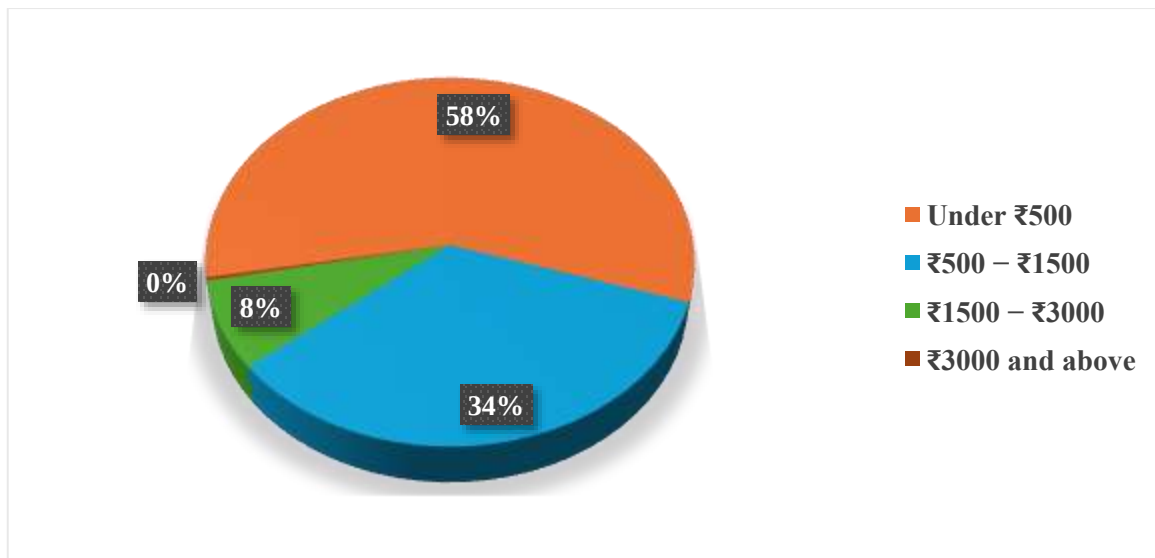


Fig 4 (b): Amount spent per month on FDA

Table 5: Meals ordered using FDA (N = 300)

	Number	%
a) Type of meal ordered using FDA		
Breakfast	5	1.7
Dinner	54	18.0
Lunch	50	16.7
Late-night meal	27	9.0
Evening snacks	109	36.3

Any time of the day	55	18.3
b) Most commonly ordered food		
Fast food	93	31.0
Continental cuisine	13	4.3
Healthy options	51	17.0
Home-cooked style meals	13	4.3
Favourite foods	130	43.3

Table 5 presents the majority of the respondents (36.3%) preferred ordering evening snacks through FDA, followed by (18.3%) who ordered food at any time of the day and (18.0%) who preferred ordering dinner. With regard to the type of food ordered, the majority of the respondents (43.3%) preferred ordering their favourite foods, followed by fast foods (31.0%) and healthy food options (17.0%). Nearly half of the respondents (48.0%) reported that they sometimes used FDA.

The present findings are in accordance with the study conducted by Fernandez et al. (2025), who reported that snacks and fast foods were the most frequently ordered food items among university students due to convenience and taste preferences. Similarly, Barros et al. (2025) observed that young adults frequently preferred ordering their favourite foods rather than healthier alternatives through online FDA. The present study also indicates that FDA are mainly used for satisfying food cravings and convenience rather than meeting regular meal requirements.

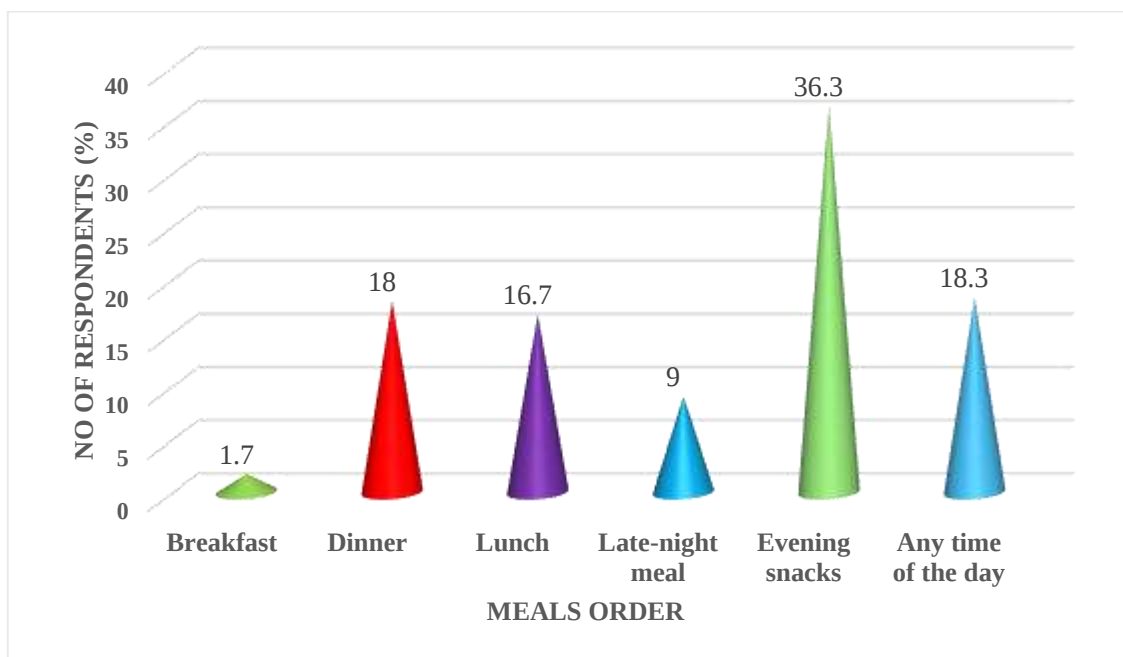


Fig 5 (b): Type of meal ordered using FDA

Table 6: Effect of FDA on social life (N = 300)

	Number	%
a) Affected social life		
I eat out less often with friends and family	112	37.3

No change	109	36.3
I prefer ordering in when with friends and family	79	26.3
b) Reduced frequency of dining out		
Yes	84	28.0
Sometimes	138	46.0
No	78	26.0
c) Affected family meals		
We eat together less frequently	91	30.3
No change	159	53.0
We order food more often as a family	35	11.7
We cook less together	15	5.0
d) Food to share with friends or family		
Frequently	32	10.7
Rarely	111	37.0
Sometimes	130	43.3
Never	27	9.0

Table 6 presents the majority of the respondents (37.3%) reported that they ate out less often with friends and family, followed by (36.3%) who experienced no change in their social life. About (26.3%) of the respondents preferred ordering food at home while spending time with friends and family. Furthermore, (46.0%) reported that FDA sometimes reduced the frequency of dining out, while (53.0%) observed no change in family meals or home-cooked food traditions.

The present findings are in accordance with the study conducted by Ismail et al. (2025), who reported that increased use of FDA reduced the frequency of eating outside with family and friends among young adults. Similarly, Singh et al. (2025) observed that the convenience of ordering food at home gradually influenced social dining habits, leading to fewer restaurant visits and family outings. The present study also suggests that FDA have modified social eating behaviour by encouraging home-based dining experiences rather than eating outside.

Table 7: Association between family income and amount spent on FDA
(N = 300)

Amount Spent on FDA	Family income						P – value
	< ₹1412 n (%)	₹1412 – ₹2823 n (%)	₹2823 – ₹4706 n (%)	>₹4707 – ₹9413 n (%)	> ₹9413 n (%)	Total n(%)	
Under ₹500	28 (62.2%)	24 (82.8%)	67 (66.3%)	22 (31.4%)	32 (58.2%)	173 (57.7%)	0.002
₹500 – ₹1500	16 (35.6%)	5 (17.2%)	27 (26.7%)	38 (54.3%)	17 (30.9%)	103 (34.3%)	

₹1500 – ₹3000	1 (2.2%)	0 (0.0%)	7 (6.9%)	9 (12.9%)	6 (10.9%)	23 (7.7%)	
₹3000 and above	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (1.4%)	0 (0.0%)	1 (0.3%)	
Total	45 (100.0%)	29 (100.0%)	101 (100.0%)	70 (100.0%)	55 (100.0%)	300 (100.0%)	

P value using chi-square/ exact test; P value >0.05 is considered as not statistically significant.

Table 7 presents the majority of the respondents from all income groups spent less than ₹500 per month on FDA. The association between family income and monthly expenditure on FDA was found to be statistically significant ($p = 0.002$), indicating that respondents with higher family income were more likely to spend higher amounts on food delivery services.

These findings are in agreement with the study conducted by Ali et al. (2024), who reported that students belonging to higher-income families spent significantly more on online food ordering because of greater purchasing power and frequent access to digital payment methods. Similarly, Nguyen et al. (2025) observed that household income was an important predictor of expenditure on FDA. The present findings suggest that economic status plays a significant role in determining spending behaviour on online food delivery services.

Table 8: Association between use of FDA and social life (N = 300)

Social life	Use of FDA						P – value
	Daily n(%)	2-3 times a month n(%)	2-3 times a week n(%)	Once month less n(%)	Once week a n(%)	Total n(%)	
I eat out less often with friends and family	0 (0.0%)	23 (35.9%)	12 (42.9%)	63 (37.5%)	14 (45.2%)	112 (37.3%)	0.244
No change	3 (33.3%)	28 (43.8%)	12 (42.9%)	53 (31.5%)	13 (41.9%)	109 (36.3%)	
I prefer ordering in when with friends and family	6 (66.7%)	13 (20.3%)	4 (14.3%)	52 (31.0%)	4 (12.9%)	79 (26.3%)	
Total	9 (100.0%)	64 (100.0%)	28 (100.0%)	168 (100.0%)	31 (100.0%)	300 (100.0%)	

P value using chi-square/ exact test; P value >0.05 is considered as not statistically significant.

Table 8 presents the association between food delivery application usage and social life was found to be statistically significant ($p = 0.244$). The majority of the respondents who frequently used FDA preferred ordering food at home with friends and family, whereas respondents with less frequent usage reported fewer changes in their social dining habits.

These findings are in accordance with the study conducted by Singh et al. (2025), who reported that increased dependence on FDA influenced social interactions by reducing the frequency of dining out and encouraging home-based food consumption. Similarly, Ismail et al. (2025) concluded that the convenience of online food delivery services gradually altered traditional social eating patterns among university students. The present study supports these findings and suggests that increased use of FDA has a significant influence on the social life and dining behaviour of young adults.

SUMMARY

The present study was conducted among college students, to assess the usage of FDA and their impact on dietary habits, nutritional status, physical activity, and social life. The study comprised 300 respondents, of whom (95.6%) were single and (6.5%) were unmarried. Equal proportions (33.3%) were from pre-university, undergraduate, and postgraduate courses. Most respondents (33.7%) belonged to the monthly family income group of ₹2,823–₹4,706. More than half (56.0%) used FDA once a month or less. Swiggy (38.0%) was the most preferred FDA, followed by Zomato (31.3%). Craving for specific foods (65.3%) was the major reason for using FDA, while variety of food options (34.7%) was the main factor influencing the selection of a FDA. Most respondents spent ₹200–₹500 per order (36.0%) and (57.7%) spent less than ₹500 per month on FDA. Nearly half (48.0%) reported using FDA sometimes. Favourite foods (43.3%) and fast foods (31.0%) were the most commonly ordered items, with evening snacks (36.3%) being the preferred meal ordered online. FDA influenced social dining habits, with many respondents reporting reduced dining out and increased preference for ordering food at home with family and friends. Statistical analysis showed a significant association between family income and monthly expenditure on FDA ($p < 0.002$), FDA usage and physical activity ($p < 0.001$), and FDA usage and social life ($p = 0.244$).

CONCLUSION

The study conclude that FDA have become an important part of college students' lifestyles because of their convenience and variety of food choices. The usage of FDA by students was associated with unhealthy eating behaviours such as increased preference for fast foods, overeating, and reduced consumption of home-cooked meals. The findings also indicate that FDA usage was significantly associated with physical activity, monthly expenditure, and social life. Therefore, promoting nutrition awareness, encouraging healthier food choices, and maintaining regular physical activity are essential to minimize the potential negative effects of FDA and support a healthy lifestyle among college students.

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