Original Research Article

Association Between Online Food Ordering Habits and Obesity Among Postgraduate Students of SCB Medical College, Cuttack, Odisha

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Abstract:

Aim: To discuss the online food ordering practice and its correlation with obesity.

Methodology: A cross-sectional study design was adopted. Purposive sampling was used to collect 249 samples for this study among postgraduate students at SCB Medical College in Cuttack, Odisha. The primary data used were those from student height and weight assessments. Univariate and Bivariate analysis was made to find association between food type and food frequency with obesity.

Result: The study's findings indicated that among SCB Medical College students, there was no association among meal kinds and obesity (p = 0.178) as well as presence of correlation between the frequency of food delivery services and obesity (p = < 0.001).

Conclusion: Ordering food online is only done about twice a week. Obesity and the sorts of food ordered when food is ordered online are unrelated. An association was found between the frequency of online food ordering and obesity in the SCB Medical College.

Keywords: Online food ordering, Obesity, college students, food type , bivariate, Cuttack

Introduction

Online meal ordering is a rapid and secure method of ordering and receiving food. With the introduction of numerous online food ordering tools, it is now possible for anyone to order food without leaving their homes. This is related to the lack of exercise and stressful lifestyles, especially in large cities, which are beginning to have an impact on the rise of the obesity or overeating problem [1]. The nutrition changes from traditional eating patterns to western ones, especially in large cities (especially in the form of fast food). Unhealthy food and carbonated beverages are examples of shifting diets that have a high calorie, fat, carbohydrate, and sodium content but low fibre content. This nutritional imbalance is a risk factor for the growth of obesity and declines in physical activity, which are mostly observed in metropolitan cities [2]. Energy intake, fat intake, protein intake, and obesity are all related. In the study, it was discovered that samples who ingested significant amounts of energy, protein, and fat were obese [3]. There is evidence that the incidence of obesity and being overweight is rising rapidly around the world and has reached a worrisome level.

Obesity affects adolescents and teenagers as well as the elderly population [4]. Low levels of physical exercise are one of the risk factors for obesity. The lack of physical activity is a result of current technology advancements [5]. More persons experience nutritional issues as a result of dietary and exercise changes. A faulty body metabolism can result from excessive eating habits and a lack of exercise, which will lead to an increase in nutrients. As degenerative diseases are currently prevalent in Indonesia, better nutrition is thought to be vital.

The World Health Organization (WHO) reported in 2015 that the global obesity rate in 2014 was 11.9%, more than 1.9 billion adults over the age of 19, and more than 600 million people were obese. The

leading causes of death worldwide are being overweight and obese. These two factors cause the deaths of over 3.4 million teens annually.According to the World Health Organization's guidelines, being overweight or obese is a risk factor for the fifth-leading cause of death. At least 2.8 million people every year pass away from obesity and overweight. In comparison to underweight, overweight and obesity have a higher mortality rate worldwide. According to the WHO, obesity is on the rise in both developing and industrialized countries.

Methods

Survey analysis was done using a cross-sectional research methodology. Post graduate students from the SCB Medical College in Cuttack, Odisha who had recently (within two weeks) placed online food orders made up the study's sample. Purposive sampling was used to collect required data. By assessing the respondent's height and weight, data on obesity could be gathered. Measuring tape (non-stretchable) and digital scales were used to measure weight and height. The Body Mass Index was then calculated. Data on online ordering of food was gathered using the researcher respondent form, which contained the frequency and types of foods ordered online, knowledge about nutritional value, knowledge on ill effect of online food ordering,

cause of online food order and money spent over online food order and preferences given for order etc. If a meal includes a variety of main courses, fruits, vegetables, and grains, it is considered to be a complete meal. If one or more of the above mentioned food groups are unavailable, the classification is incomplete. If you place an order more than twice in a week, it is considered often ; otherwise, it is considered rarely. BMI below 25 kg/m^2 is taken as non obese and BMI of $25kg/m^2$ or more is taken as obese.

The univariate and bivariate methods of data analysis were used. To determine the distribution of gender , kind and frequency of ordering meals online as well as obesity, a univariate analysis was carried out. Bivariate analysis was done with Spearman Rho's test to examine the association between both the kind and frequency of online food orders and obesity in SCB Medical College students. " r" value was used to determine the strength of association between the above mentioned. Institutional Ethics Committee approval was taken before commencement of the study.

Results

Baseline Characteristic of the participants:

Table 1: Distribution of respondent characteristics

Characteristics		Number (n)	Percentage (%)
Gender			
	Male	105	**42.17%**
	Female	144	**57.83%**
Food type			
	Incomplete	156	**62.65%**
	Complete	93	**37.35%**
Food frequency			
	Rarely	198	**79.52%**
	Often	51	**20.48%**
Nutritional			
Status	**BMI < 25kg/m²** (Non-obese)	186	**74.70%**
	BMI ≥ 25kg/m² (Obese)	63	**25.30%**

Table 1 demonstrates that 57.83% of study participants are female, 62.65% of online food orders are incomplete type, 79.52% of study participants ordered online food rarely whereas 20.48% study participants have often ordered food online, and 74.70% of students have BMI less than 25 kg/m² while 25.3% of students are overweight or obese.

Table 2: Most preferred items ordered for breakfast, lunch, dinner, snacks & their calories

Items	No. of samples	Calories per serving
Suji upma	79	231 kcal
Idli	50	70 kcal
Bara ghuguni	31	285 kcal
Biryani	27	307 kcal
Roti/paratha with chicken curry	91	290 kcal
Chicken curry	104	290 kcal
Ice cream	47	222 kcal
Pizza	35	207 kcal

Table 2 lists the two products that people most often order online for breakfast, lunch, supper, and snacks, along with the number of samples who like those particular meals, and their calorie counts per serving. Suji-upma was the morning food that people most frequently bought online (31.72%of the subjects). Suji-upma has 231 kilocalories per serving. Chicken curry was the most popular food for both lunch and dinner, chosen by 104 and 53.8% of the subjects, respectively. Chicken curry has 290 kilocalories per serving. 17.6% of the participants preferred ice cream as a snack, which has 222 calories per serving.
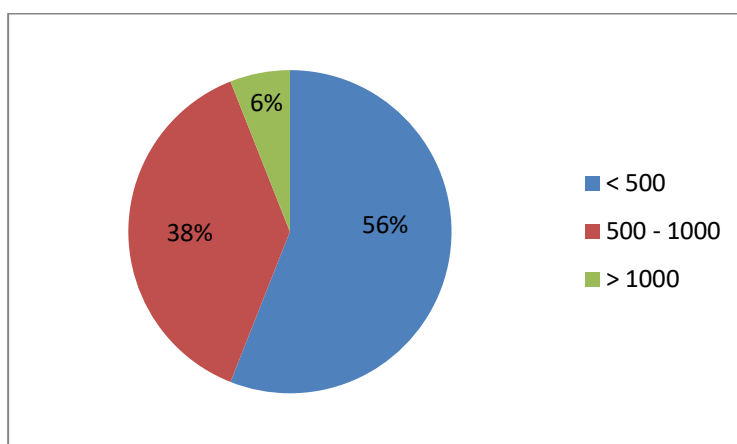

Figure 1: Money spent per week for online food ordering

Figure 1 shows that 56% of study participants spent less than Rs 500 per week for online food ordering, 38% of participants spent Rs 500 – Rs 1000 per week and only 6% of participants spent more than Rs 1000 per week for online food ordering.
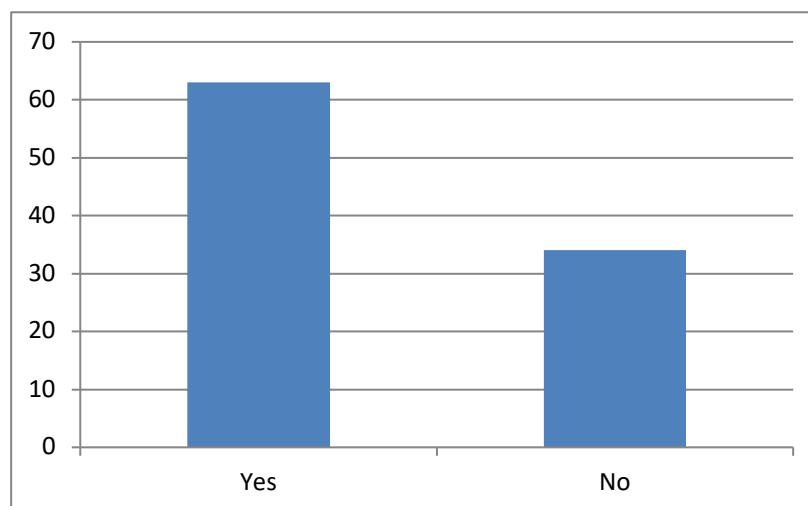

Figure : 2 Knowledge about nutritional value

Figure 2 depicts that 36% of study participants did not have the knowledge of nutritional value of food while ordering online.
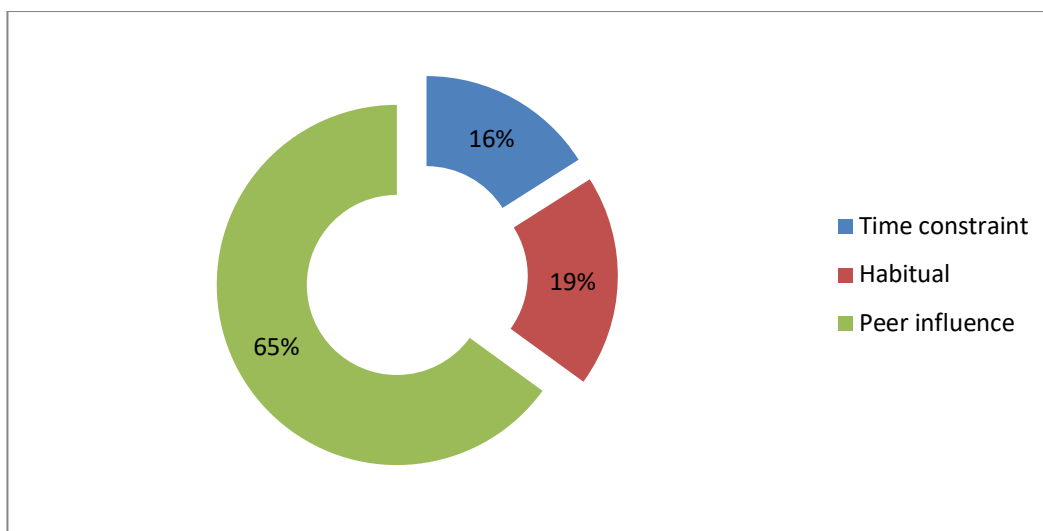
Figure 3: Cause of ordering

Figure 3 shows that 65% of the study participants had ordered food online due to peer influences, 19% of study participants had habit to order food online and only 16% of study participants had ordered due to time constraint.
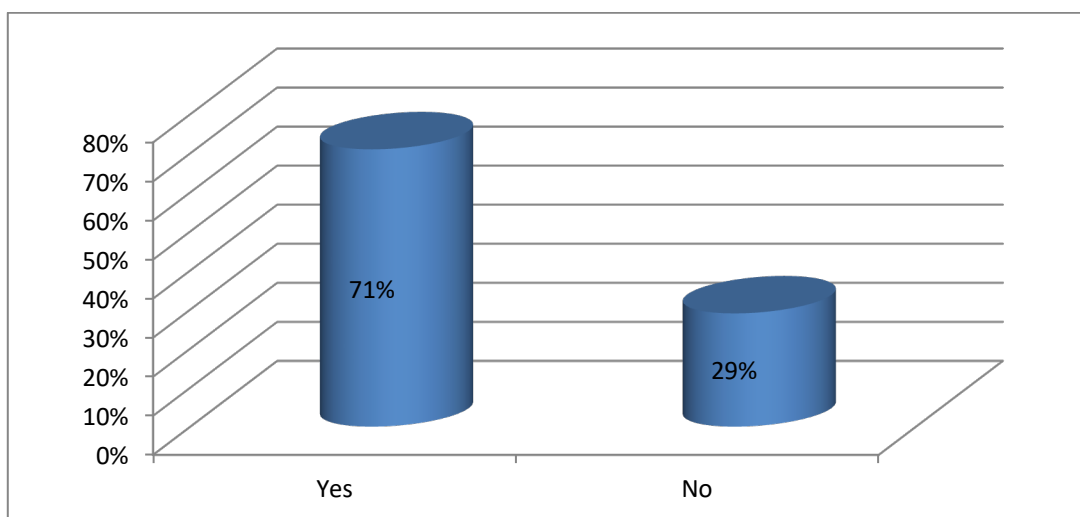

Figure 4: Knowledge about ill effects of online food ordering

Figure 4 depicts that 71% of study participants were aware of ill effects of taking online food frequently.
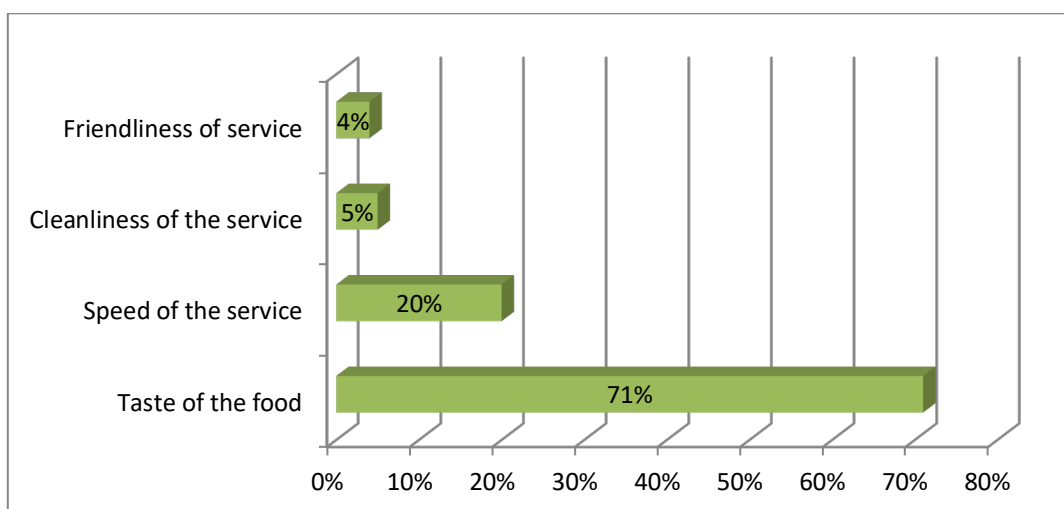

Figure 5: Preferences given while ordering food online

Figure 5 describes the distribution of preferences given while ordering food online. 71% of study participants had given preference to taste of the food while ordering, 20% had given to speed of the service, 5% had given to cleanliness of the service and only 4% of the study participants had given to friendliness of service.

Table 3: Correlation of frequency and types of orders with obesity

Variable	Obesity (N =63)	No obesity (N= 186)	P value
	n(%)	n(%)	
Types of food online			
Complete	28 (44.4%)	65 (35.0%)	0.178
Incomplete	35 (55.6%)	121 (65.0%)	
Ordering frequency of online foods			
Often	51 (80.9%)	50 (26.8%)	< 0.001
Rarely	12 (19.1%)	136 (73.2%)	

* r = 0.87

Table 3 shows that out of 63 students who are overweight or obese, 28(44.4%) had ordered a complete type of food and 35 (55.60%) had ordered incomplete type of food. Then from 186 students who are not overweight/obese, 65 (35%) had ordered complete food types while 121 (65.0%) had ordered incomplete type of food. The results of the analysis showed that there was no significant relationship between the types of food ordered online with obesity in SCB Medical College PG students. The results of the analysis of the relationship between the frequency of online food ordering and obesity showed that out of the 63 students who had BMI $\geq$ 25kg/m^2, 51(80.9%) had often ordered food online and out of the 186 students who have BMI < 25kg/m^2 have rarely ordered food online which was statistically significant.

The value of correlation coefficient (r) is 0.87 which suggests that there was a strong positive correlation between frequency of online food ordering and obesity among postgraduate students of SCB medical college, Cuttack. The results of bivariate analysis was shown in **Table 3**.

Discussion

It was found that female students order food more frequently than males. The most popular food type when ordering food online is an incomplete food type. The findings demonstrated that there was no association between the types of food ordered while ordering food online and obesity. According to Arlinda's [6] study results, having access to inexpensive, quick, and unhealthy meals, such as fast food, can have an impact on obesity. According to study by Prima [7], factors in food consumption like junk food and physical activity can have an impact on the prevalence of obesity. Research by Trushna Shah et al. In [8] with 138 students confirmed this. Of the students, 58.4% said they like fast food, and 34% said they ate it not because there was no food at home but rather because other their lifestyle or that of teenagers. According to study by Dewi and Trias [9], rice makes up 59.8% of the carbs consumed, with men eating it the most frequently- 3 times daily- at 39.1% and women- 2 times daily at

21.8%. Additionally, research reveals that 29.8% of workers consume meatballs, with men eating them most frequently- 2 times per week at a 13.8% rate- and women eating them least frequently- once per week. Online meal ordering occurs about twice a week, which is comparatively infrequent. However, the majority of students who frequently purchase food online are fat and do so more than twice each week.

The findings revealed an association between SCB Medical college students' online food ordering frequency and obesity. Adults are more likely to be obese, and the risk of obesity increases with age. The age group of early adults is entered by students. According to Victor's [9] study, 9.8% of Tamale University in Ghana's Faculty of Medicine and Health Sciences students were obese. In this study, obese students are those that engage in less physical exercise, drink alcohol, and/or consume coffee. According to the World Health Organization, one of the top 10 causes of mortality and disability worldwide is an inactive lifestyle. Between 60% and 85% of adults in the majority of countries do not engage sufficient regular exercise to preserve their health [10]. Degenerative illnesses can be brought on by eating unhealthy foods, eating too much food that contains fat and cholesterol, and not getting enough fibre. Riskesdas' analysis of the lifestyle factors for degenerative diseases in North Sumatra revealed that 51.9% of the population there does not engage in any form of physical activity or exercise. In North Sumatra, obesity and overweight prevalence rates were 31.1%. The percentage of overweight and adult obesity in the field cities is 38.1% [11].

According to a study by Mustelin from 2009 [12], there is a clear link between regular exercise and obesity. Bivariate analysis revealed that respondents who did not frequently exercise had an increased risk of obesity of 1.35 times that of those who did. Teenagers who don't regularly exercise really likely to consume more calories than those who do. This is another surprising finding. Together or separately, diet and exercise can influence the chances of development of obesity.

Conclusion

According to the study's findings, female students order food online at a higher rate than male students. The purchased meal falls under the category of an incomplete form of food, meaning that it is missing one or more types of side dishes, vegetables, fruit, or staple foods. Additionally, ordering food online is only done about twice a week. Students are usually spending less than Rs 500 per week to order food online. Most of the students are aware about nutrition value and ill effects of online ordered food however there is requirement of practice of this knowledge. Most of the students have given preference to taste of food while ordering food. Obesity and the sorts of meals ordered when foods are purchased online are unrelated. For SCB Medical College students, there is a correlation between frequency of ordering food online and obesity.

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