



THE CORRELATION BETWEEN ONLINE FOOD ORDERING AND NUTRITIONAL STATUS AMONG COLLEGE STUDENTS IN SURABAYA

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ABSTRACT

Introduction: The prevalence of overweight and obesity among adults has increased yearly in Indonesia. Online food ordering was believed to have a contribution to this condition as it shortens access to food. This study aimed to analyse the correlation between online food ordering and the nutritional status among college students in Surabaya.

Method: This study used a descriptive correlational design with a cross-sectional approach. Samples were recruited using the convenience sampling technique; 388 college students at the B campus of Universitas Airlangga Surabaya were involved. The independent variable of this study was the intensity of online food ordering. While the dependent variable was the nutritional status among college students. A questionnaire and Food Frequency Questionnaire (FFQ) using google form which distributed online used as an instrument. Data were then analyzed by using Spearman Rho Test with level of significance ($p \leq 0,05$).

Results: This study showed that online food ordering did not correlate with nutritional status ($p=0.595$). Most of food ordered online were high sugar, salt, and fat food.

Conclusion: It is concluded that there is no relation between the intensity of online food ordering and nutritional status among college students.

Keywords: food ordering; nutritional status; overweight; college students

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INTRODUCTION

Excess nutritional status is precarious against diabetes mellitus type 2, hypertension, heart disease, and other metabolic syndrome diseases National Institutes in Sholeha (2014). The prevalence of overweight and obesity among adults is increasing in the developing countries, especially among young adults (Caballero, 2007 in Sudikno et al., 2015). It is caused by the changes in various aspects of life, such as technology and communication advances. This phenomenon changed the consumption patterns of young adults, especially students who are more inclined to consume processed foods outside the home for reasons of efficiency and practicality. Based on Wiguno et al. (2014), the research results

concluded that segmentation fast-food consumers online in demographics in Surabaya is a group of students.

In 2016, there were more than 1.9 billion adults in the world had overweight and obese, with 39% overweight and 13% obesity with over overweight sufferers typical in women (40%) than men (39%) (WHO, 2018). Based on the analysis of the survey Individual Food Consumption in 2014, the average sugar consumption of the Indonesian population is 25.61 g/cap/day, salt consumption is 6.68 g/cap/day, and fat consumption is 53.3 g/cap/day. Analysis results show that 3 out of 10 people in Indonesia (29.7%) consumed sugar, salt, and fat, which exceeds the limit that Permenkes RI has determined.

According to Permenkes RI (2013), habit consuming food with content constantly high in sugar, salt, and fat can continuously increase the risk of obesity (Ningdiah, 2019). Based on data RISKESDAS (2018), East Java occupies the position of the top 15 provinces with the proportion of obesity in adults aged ≥ 18 years in 2018 (Ministry of Health Republic Indonesia Research Agency and Development, 2018). The City of Surabaya occupies the top 10 cities and districts highest in East Java by proportion to central obesity in adults ≥ 15 years in 2018 (Ministry of Health Republik Indonesia, 2018a).

Technological developments have formed new patterns in community's life (Fitriani, 2018). Business online ordering, which can be accessed through application or website, facilitates one's needs fulfilment, including food. There is easy way to access food, including junk food, which can increase the prevalence of overweight and obesity (Amalia, Sulastri and Semiarty, 2016). According to Kustiawan and Kuncoro (2013), the first factor that affects consumers' purchases of snacks online is a limitation of access in reaching out like unavailability food at home and cannot make the food they want to buy. The thing is making the prevalence even higher obesity due to consumption patterns that are not controlled. If activities online food ordering are not handled well, the prevalence of overweight and obesity in the world, especially in Indonesia, is increasing. The death rate caused by emerging non-communicable diseases due to obesity is increasing too.

Based on the description above and supported by behavioural theory by Lawrence W. Green, who states that a behaviour is influenced by several factors like knowledge and support close people. Behaviour also affects the health level of an individual. Then from that, the researcher wants to correlate food ordering online, including the intensity of online food ordering and frequency of consumption of food saturated with sugar, salt, and fat, with the over the nutritional status of students in Surabaya.

METHOD

This research used descriptive correlational with a cross-sectional approach. The population were undergraduate students of Faculty of Law, Faculty of Economy and Business, Faculty of Social and Political Sciences, and Faculty of Humanities, Universitas Airlangga, ever buy food through the online market at least twice a week, in the last two months, ever measuring weight in the last two months, and live in a boarding house. Samples were recruited using the convenience sampling technique; 388 college students were involved as respondents. Inclusion

criteria are students of Universitas Airlangga B Campus includes Faculty of Law, Faculty of Economy and Business, Faculty of Social Sciences and Political Sciences, and Faculty of Humanities that have undergraduate education, ever order for food online at least twice in one week in one until the last two months, ever measuring weight in the last one to two months, live in a boarding house or student dormitory during college period. The Independent variable in this study is the intensity of online food ordering. The dependent variable is the nutritional status. The research instrument was a questionnaire containing questions about demographic data, weight, height, and the intensity of online food ordering. The Food Frequency Questionnaire (FFQ) contains a table of respondent frequency in consuming multiple sources a predetermined online or offline food ordering. Respondents fill out a questionnaire at google form that has been distributed online. Univariate analysis was used to describe the frequency distribution of the sample's age, gender, knowledge, intensity, and index Body Mass (BMI). Bivariate analyses were performed using the Spearman Rho's test. This research proposal has passed the Health Research Ethics Committee (KEPK) of Airlangga University in Surabaya.

RESULTS

Table 1 shows the distribution of respondents based on the demographic characteristics of 388 students. The distribution data of this research the majority age of respondents are 21 years exist 110 respondents

Table 1 Frequency Distribution Characteristics on Students of Universitas Airlangga B Campus (n = 388)

Demographic Characteristics	Frequency	% of Respondents
Age (years old)		
17	1	0,3
18	13	3,4
19	41	10,6
20	87	22,4
21	110	28,4
22	101	26,0
23	23	5,9
24	7	1,8
25	5	1,3
Gender		
Male	130	33,5
Female	258	66,5

Table 2 Frequency Distribution of Online Food Ordering on Students of Universitas Airlangga B Campus (n = 388)

Variable	Frequency	%
The intensity of Online Food Ordering		
Rarely	47	12,1
Sometimes	183	47,2
Often	158	40,7

Table 3 Frequency Distribution of Body Mass Index (BMI) Categories on Students Universitas Airlangga B Campus (n = 388)

Variable	Frequency	Category
Body Mass Index (BMI)		
<i>Underweight</i>	3	0,8
Normal	120	30,9
<i>Overweight</i>	226	58,2
Obesity	39	10,1

Table 4. Correlation between the Intensity of Online Food Ordering with Nutritional Status

The intensity of Online Food Ordering	Body Mass Index (BMI)									
	Underweight		Normal		Overweight		Obesity		Total	
	f	%	f	%	f	%	f	%	f	%
Rarely	1	0,3	13	3,4	27	7,0	6	1,5	47	12,1
Sometimes	2	0,5	58	14,9	110	28,4	13	3,4	183	47,2
Often	0	0	49	12,6	89	22,9	20	5,2	158	40,7
	3	0,8	120	30,9	226	58,2	39	10,1	388	100
p=0,595										

Table 5 Frequency Distribution Saturated with Sugar of Online and Offline Food Consumption on Students of Universitas Airlangga B Campus (n = 388)

Kind of Food	Online		Offline	
	Mean	Mean	Mean	Mean
Cake	1,61	1,45		
Donuts	1,34	0,85		
Pudding	1,37	1,21		
Ice Cream	1,57	1,42		
Sweet Martabak	1,44	1,23		
Maryam's Bread	1,20	1,06		
Toast	1,42	1,22		
Crepes	1,20	1,07		
Soft Drink	1,76	1,45		
Bottled Beverages	1,91	1,82		
Coffee	1,84	1,93		
Sweet Tea	2,01	1,96		
Boba (Bubble Tea)	1,40	1,17		

Table 7 Frequency Distribution Saturated with Salt of Online Food Consumption on Students of Universitas Airlangga B Campus (n = 388)

Kind of Food	Online		Offline	
	Mean	Mean	Mean	Mean
French Fries	1,43	1,27		
Fried Chicken	2,26	1,90		
Pizza	1,26	1,10		
Burger	1,29	1,13		
Sausage	1,54	1,38		
Macaroni Product Processed	1,31	1,19		
Instant Noodles	1,82	1,68		
Salted Egg	1,20	1,09		
Onion Rings	1,15	1,04		

Table 9 Frequency Distribution Saturated with Fat of Online Food Consumption on Students of Universitas Airlangga B Campus (n = 388)

Kind of Food	Online		Offline	
	Mean	Mean	Mean	Mean
Ice Cream	1,57	1,42		
Coffee	1,84	1,93		
French Fries	1,43	1,27		
Fried Chicken	2,26	1,90		
Ayam Geprek	1,65	1,49		
Something Fried	1,99	1,88		
Sedlak	1,36	1,18		
Egg Martabak	1,34	1,16		
Coconut Milk Food (gulai, Soto, opor, and others)	1,65	1,56		
Onion Rings	1,15	1,04		
Fried Rice	1,66	1,56		

(28.4%) and the majority gender of respondents are women exist 258 respondents (66.5%). Based on

Table 2, most respondents have the intensity of online food ordering with sometimes a week

category exist 183 respondents (47.2%). Based on Table 3, most respondents have nutrition status with the overweight category exist 226 respondents (58.2%).

Based on Table 4, there is in correlate significant between ordering intensities food online with the Body Mass Index (BMI) with p-value = 0.595 and value correlation coefficient 0.027, which means the strength of the correlation between the intensity of online food ordering with over nutritional status is the very low category. The direction of the positive correlation means the higher the intensity of online food ordering, the higher the body mass index value (BMI).

Based on Table 5, the food saturated with sugar often online ordered is sweet tea with an average frequency of 2.01, which can be interpreted as ordering 1-3 times a week. Based on Table 7, food saturated with salt often online ordered is fried chicken with an average frequency of 2.26, which can be interpreted into ordering 1-3 times a week. Based on Table 8, food saturated with salt often offline ordered is fried chicken with an average frequency of 1.90 that can be interpreted into category ordering 1-3 times a week. Based on Table 9, it can be seen that food saturated with fat often online ordered is fried chicken with an average frequency of 2.26 and something fried with an average frequency of 1.99 that can be interpreted inward order category 1-3 times a week. Based on Table 10, it can be seen that food saturated with fat often offline ordered is coffee with an average frequency is 1.93, which can be interpreted into categories ordering 1-3 times a week.

DISCUSSION

This study found no correlation between the intensity of online food ordering with college students' nutritional status. It is similar to previous research by Fitriani (2018). The factors that caused consumer decisions are diverse, as described by Kustiawan and Kuncoro (2013), one of them is far to go to the outlet. These factors can trigger someone to prefer to order food online than buy directly in the shop.

This study also found that most of the food ordered is high in calories, contains sugar, salt, and fat which is unhealthy. Food saturated with sugar consumption online is higher in frequency than food saturated with sugar consumed regularly offline. However, the type of food is the highest frequency most often consumed in a week is the same type, namely sweet tea. Food saturated with salt Consumption in one week has the highest frequency and in the same type of food, fried chicken. However,

online consumption has still more proven higher in frequency than offline consumption. The saturated with salt consumption online is still higher in frequency than saturated with sugar consumption online. The last food consumption examined in this study is saturated with fat consumption. Food saturated with fat frequency by online ordering is fried chicken. Fried chicken is not the only salt source but is also included in foods high in fat. The frequency average for food saturated with fat consumption offline is coffee. Among the three saturated with food online and offline, the type of food the most often consumed is fried chicken by online ordered.

A previous study found that online food customers order high-sugar food such as coffee and boba drinks during working hours. There are so many kinds of drinks offered, as a variety of sweet tea. The creamer, milk, and chocolate were added as a topping to increase the visual look. However, it will also increase the sugar level. Food saturated with salt is fried chicken, and fat is fried chicken and ayam geprek. Various kinds of processed by innovations of chicken make this a popular dish in various circles. The addition of the high spices in salt content and MSG can not be removed from the seasoning like barbeque, roasted corn, sweet-spicy, and others. Fried chicken occupies the highest average of consumption food saturated with fat in this study. The processing process of frying makes the fat by oil in these foods also high. However, young adults choose to consume it for taste and enjoyment without thinking about their health in the future. So it cannot be denied if the highest food consumption is in This FFQ is a type of fried chicken.

CONCLUSION

There is no correlation between knowledge with the intensity of online food ordering and no correlation between the intensity of online food ordering with over nutritional status. Meanwhile, the frequency of food ordering saturated with sugar, salt and fat measured in the FFQ is more often done online than offline.

Students should use social media wisely. University is expected to improve facilities and infrastructure such as the provision of exercising facilities that can be the minimum exercise, for example, pull up facility and optimise health services in an effort promotive and preventive health in particular for the prevention of obesity. Besides, it is necessary to hold promotion health to carried out in early adulthood and young adulthood to prevent obesity and other degenerative diseases and provide

information about excess weight problems that are easily accessible to college students.

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