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Improvement of Obesity Events Through Online Fast Food Dating Patterns at University X Students in Depok City

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Abstract

The fast-food online diet can outweigh obesity. The research was conducted on students because students were at the stage of adulthood where metabolism slows down and the trend of ordering food online is mostly done by students. This study identified the relationship between fast food online diet, physical activity, and genetic history with obesity. The research design used was cross sectional with a population of all University X students class 2016-2019 and a total sample of 164 respondents. Data obtained from the FFQ and IPAQ questionnaire sheets through the online G-form. The results of the bivariate analysis with the Chi-Square test showed that there was no significant relationship between online fast food eating patterns and BMI / obesity ($p > 0.005$), likewise for physical activity variables also did not show a significant relationship with obesity ($p = 0.746$) However, for genetic history, there was a significant association with obesity ($p < 0.05$). This shows that eating fast food online does not directly lead to obesity. There are various other factors that can trigger obesity, one of which is genetic history.

Keywords: BMI, Obesity, Online Fast Food, Student

Preliminary

The era of globalization is very close to technology, through technology humans can find new ways of carrying out activities in everyday life. Lifestyle changes in modern society encourage people to become consumptive, this is due to the community's need for a more practical life so that it does not interfere with work and time efficiency. This condition causes various businesses to emerge through the digital era which makes it easier for humans to fulfill their needs (Hidayatullah, et al., 2018).

The habit of ordering food online is a form of lifestyle change in modern society. This is influenced by a very practical

lifestyle so that it is difficult for modern society to avoid fast food or so-called fast food. According to Hariyanti, 2019 data shows that online food ordering users do not always pay attention to whether or not the nutrition of the type of food ordered is good or bad.

Foods that contain good nutrition are foods that contain nutrients in the form of carbohydrates, protein, fat, vitamins, minerals and fiber needed by the body (Wijayanti, 2017). Students are young people ranging in age from 18-22 years, who will be impacted by bad eating habits and lack of physical activity as a result of ordering food online.

This is also supported by data on the

nutritional status of UI students based on research conducted by Sasheeta (2017) at the University of Indonesia, which shows that the average BMI of respondents, namely 125 students, is 22.19 kg / m². The lowest BMI value was 15.68 kg / m² and the highest BMI value was 34.57 kg / m². The number of respondents with underweight nutritional status (<18.5) was 17 people or 13.6%. Then as many as 82 respondents (65.6%) had normal nutritional status (18.5-25.0), and as many as 26 respondents (20.8%) had fat nutritional status (> 25.1). So from these data it can be seen that of the 125 students, more than 20% have a fat nutritional status.

According to the Ministry of Health (2019) the factors that cause obesity are divided into two, namely patterns of physical activity and diet. Obesity and being overweight are also caused by excessive amounts of energy intake. Students are individuals who have dense activities, therefore they should maintain their health, so that their activities can run smoothly, one of which can be obtained through a good diet.

Therefore, the online fast food diet among X University students in Depok City is a major concern for the author because obesity can be influenced by the intake of food consumed (Kemenkes RI, 2019). In addition, with increasing age, the body's metabolic rate also begins to decline, starting in adulthood, and students are early adulthood, where if physical activity is also reduced, fat deposits will cause obesity (Mardalena & Suryani, 2016).

This research will be conducted on students at the University of Indonesia, because based on survey data, the highest number of online food orders is among students, namely 44.2%, with an age range of 21-25 years of 48.4%. The number of online food orders based on domicile, West Java province is in fourth place, which is 10.1% of all regions in Indonesia, and the University of Indonesia campus is

in West Java Province (Cahya, 2019)

Method

The research design used was cross sectional, the population taken in this study were all University of Indonesia students from the three families, including the Science and Technology Clusters, the Social Sciences and Humanities Clusters, and the Health Sciences Clusters, starting from the 2016-2019 class with total respondents. as many as 164 students. Sampling in this study using probability sampling method.

Prior to the data collection process, an ethical test was conducted first, and this study had passed the ethical test by the ethics team, and the researcher had obtained research permission. Then before becoming a respondent, informed consent is first explained to the respondent via chat, when distributing broadcast messages, and at the beginning of filling in the google form, namely on the explanation page of research (informed consent), and on the next page, the informed consent page that the respondent have agreed to participate to be one of the respondents in this study.

Data collection in this study was obtained from the respondent's identity sheet, the Food Frequency Questionnaire (FFQ) Questionnaire and the International Physical Activity Questionnaire (IPAQ) questionnaire using the g-form which the link was shared online with respondents from June to July 2020. The FFQ questionnaire for identifies the type of food, the frequency of eating, and the amount of food consumed by the respondent, there are several things that are modified from the questionnaire including the type of food, where the type of food in the FFQ questionnaire is adjusted to the research of each researcher, in this study the type of food taken is the type of fast food the most frequently consumed by the public, besides that, the number of meals is divided into two, namely 1 portion and

more than 1 portion, the determination of the portion depends on each type of food, every single portion of fast food food has the same standard in every food shop, even though has a large portion value different from each type of food. Then, for the frequency of eating according to the predetermined frequency of meals, namely > 3 times / day, 1 time / day, 3-6 times / week, 1-2 times / week, and 2 times a month (Sirajuddin, Surmita, & Astuti, 2018). Then the IPAQ Questionnaire to find out what physical activity the respondents did during the past week. This questionnaire uses a questionnaire that has been translated into Indonesian by a previous researcher, Hastuti in (2013), and the author has obtained permission to use the questionnaire.

Data analysis carried out included univariate and bivariate analyzes. Univariate analysis was carried out to see the characteristics of each variable studied, including age, gender, faculty, residence, pocket money, genetic history, physical activity, Body Mass Index (BMI) as well as type of food, frequency of food,

and amount of food. Bivariate analysis was carried out to analyze the relationship between diet which consists of type of food, frequency of eating, and amount of food. Bivariate analysis was conducted to analyze the relationship between diet consisting of type of food, frequency of eating, and amount of food, as well as physical activity and genetic history (independent variable) and obesity (BMI) (dependent variable).

Result

The results of the study are shown in the following table:

Table 1. Characteristics of Respondents by Age (N = 164)

Characteristics	Media n	Min	Max	Std. Deviation
Age (In Years)	21.000	17	24	1.178181491
	0			

These results indicate the characteristics of the respondents where the majority of respondents are aged 21 years, the youngest respondents are 17 years old, while the oldest respondents are 24 years old.

Table 2. Demographic Data of Respondents (N = 164)

Characteristics	Category	Amount (n)	Precentage (%)
Gender	Man	36	22
	Woman	128	78
	Total	164	100
Residence	Private Home	9	5,5
	Parent's House	112	68,3
	Boarding House, Dormitory, or Rented	43	26,2
	Total	164	100
Faculty Cluster	SAINTEK Science Cluster	38	23,2
	SOSHUM Knowledge Cluster	43	26,2
	Health Sciences Cluster	83	50,6
	Total	164	100
Pocket Money Group	< Rp 1.000.000	42	25,6
	1.000.000 – 3.000.000	117	71,4
	3.000.000 – 5.000.000	5	3
	Total	164	100
IMT Group	Weight Level Skinny	7	4,3
	Light Level Skinny	25	15,2
	Normal	102	62,2
	Excess Weight	18	11
	Obesity	12	7,3
	Total	164	100
Physical Activity	Light	39	23,8

Characteristics	Category	Amount (n)	Percentage (%)
	Moderate Weight	46	28
	Total	164	100
Genetic History	Yes	82	50
	No	82	50
	Total	164	100

Based on the table, it shows that the majority of gender respondents are female as many as 128 people (78%), while male respondents are 36 people (22%). The majority of respondents live together with their parents as many as 112 people (68.3%), while the minority of respondents live in "private homes", which is 9 people (5.5%). The majority of respondents came from the health science clusters, namely 83 people (50.6%), for the social sciences and humanities groups there were 43 respondents (26.2%), while in the 3rd place were the science and technology clusters as many as 38 people (23.2%). The majority of respondents have pocket money in a month between Rp. 1,000,000 to Rp. 3,000,000, which is 114 people (71.4%). Meanwhile, the least number of respondents was respondents who had an allowance of "3,000,000 - 5,000,000" in a month, namely 5 people (3%).

The majority of respondents at X University have a normal Body Mass Index (BMI), namely 102 people (62.2%).

Meanwhile, respondents with a BMI of Thin Weight had the lowest percentage, namely 4.3% or 7 people, smaller than respondents with BMI "Obesity", namely 12 people or (7.3%). The majority of respondents' average body weight has a body weight of 56.25 kg with a mean (median) 53 kg. While the minimum - maximum values are at 36 - 111 kg. For the majority of respondents, on average, they have a height of 160.65 cm with a median of 160 cm. While the minimum - maximum values are in the numbers 145 - 180 kg.

The majority of respondents had strenuous physical activity in the last week as many as 79 people (48.2%), while the minority of respondents had "light" physical activity in the past week, namely as many as 39 people (23.8%). Respondents with a genetic history of obesity and without a genetic history of obesity had the same number, namely 82 people / 82 people (50% / 50%)

Table 3. The relationship between dietary characteristics (frequency of food, amount of food, and physical activity) and BMI (N = 164)

Diet Characteristics		IMT (in percent)					Total (in percent)	Nilai P-value
		Very Thin	Skinny	Normal	Excess Weight	Obesity		
Type of Food	Fried Chicken	4,3	14,7	62,6	11	7,4	100	0,547
	Pizza	5	15,6	63,1	8,5	7,8	100	
	French Fries	4,1	15,2	63,4	9,7	7,6	100	
	Humberger	4,6	14,6	63,8	8,5	8,5	100	
	Spaghetti	3,9	15,6	62,5	9,4	8,6	100	
	Fish and Chips	4,1	15,6	63,9	7,4	9	100	
Eating Frequency	> 3 Times a Day	0	0	0	0	0	0	0,609
	1 Times a Day	0	0	0	100	0	100	
	3-6 Times a Week	50	0	0	50	0	100	
	1-2 Times a	0	42,9	42,9	14,3	0	100	

Diet Characteristics	IMT (in percent)					Total (in percent)	Nilai P-value
	Very Thin	Skinny	Normal	Excess Weight	Obesity		
Week 2 Times a Month	4,2	14,7	64,3	8,4	8,4	100	0,786
The Number of Meals 1 Portion	3,5	15,6	63,1	10,6	7,1	100	
> 1 Portion	8,7	13	56,5	13	8,7	100	

Before conducting the bivariate test, the researcher first carried out a data normality test using the Kolmogorov-Smirnov test which can be used for ordinal and nominal data scales. Based on the normality test, it was found that the data was not normally distributed, so it used the Chi Square test, because it is a non-parametric test (Miller, 2014).

Based on table 3, it shows that there is no relationship between types of fast food online and BMI, including obesity ($p = 0.547$). Then there was also no relationship between the frequency of eating fast food online and BMI ($p = 0.609$). Then, the number of online fast food meals with BMI also had no relationship ($p = 0.786$).

Table 4. Relationship between physical activity characteristics and genetic history with BMI (N = 164)

Characteristics		IMT					Total	P-value
		Very Thin	Skinny	Normal	Excess Weight	Obesity		
Physical Activity	Light	5,1	10,3	64,1	15,4	5,1	100	0,737
	Moderate	6,5	19,6	56,5	6,5	10,9	100	
	Weight	2,5	15,2	64,6	11,6	6,3	100	
Genetic History	Yes	4,9	12,2	52,4	17,1	13,4	100	0,000
	No	3,7	18,3	72	4,9	1,2	100	

Based on table 4, it shows that there is no relationship between physical activity and BMI ($p = 0.737$). Meanwhile, between genetic history and BMI or obesity, one of them showed that there was a significant relationship ($p = 0.000$) or $p < 0.005$.

Discussion

The relationship between types of fast food online food and BMI in this study shows that there is no significant relationship, it can also be seen from each type of food chosen, the majority of X students have a normal BMI, when viewed from an obese BMI, also only 7% -9 % of students who have an obese BMI from any type of food. There is no relationship between the type of food and BMI, one of which is obesity in this study because the type of food chosen by the respondents is only the type of online fast food ordered in the last month, and the number of types of

online fast food consumed is also limited. The same research results also occurred in a study conducted by (Harahap, 2019) where there was no relationship between online food types and obesity.

The relationship between the frequency of fast food online food and BMI in this study shows that there is no significant relationship. This can occur because this study uses a data collection process through the FFQ questionnaire, so that the results of total consumption per day or week are a picture of orders made during the last month, even though the process of obesity is chronic and does not occur immediately, such as within a month, and coupled with other factors, so that a person can be obese (G Brat et al, 2017).

Another factor is the average frequency of fast food orders in a month, the average respondent only orders fast

food twice a month, both those who are obese and who have a light or normal thin BMI. This can be due to low pocket money, because based on the results of cross tabulation, it was found that respondents who ordered fast food twice a month and those who consumed it more frequently (3-6 times / week, or 1-2 times / week) had the majority the same allowance, which is between IDR 1,000,000 - IDR 3,000,000.

The relationship between the amount of fast food online food and BMI including obesity in this study shows that there is no significant relationship between the two, this is because even though they consume more than 1 portion at one meal, it could be that in one day the respondent only consumes fast food, the rest eat food without containing a lot of fat, and consuming fruit, so that the calories needed by the body are still appropriate, not excess, which in this study did not look at the food consumed within 24 hours. And as is well known, based on the data, even though some eat food more than one portion, the frequency of the majority of respondents eating fast food online is only 2 times a month, so it does not affect BMI.

The relationship between physical activity and BMI or obesity in this study showed no relationship between physical activity and BMI and obesity. This happens because, during the pandemic, someone who has a thin BMI who usually has heavy physical activity has reduced physical activity, as well as those who are obese. In addition, the absence of a relationship between physical activity and BMI can also be caused by the age difference range of research subjects, where in this study, respondents were in a young age range, because according to Malinda, (2018) a person's activity decreases with age. Then, based on the results of cross tabulation, it was found that there was no significant difference between the sexes of both men and women.

In this study, mothers and fathers were considered as carriers of a history of obesity. Genetic traits passed from parent to child is one of the body's metabolic processes, in this case, the history of obesity in both parents has an important role in causing a person to become obese. A person's body weight is directly or indirectly regulated by genetic factors, because it influences metabolism and hormonal factors that regulate aspects of energy intake, energy use, and energy expenditure in the body which ultimately causes obesity (Ross, Shils, Shike, Caballero & Cousins, 2014). The association of genetic history with BMI or obesity in this study shows that there is a relationship between genetic history and BMI or obesity.

Conclusion

The results of the research conducted on the University of Indonesia Regular Undergraduate students in 2016-2019 as many as 7.4% of respondents were obese, then most of the respondents had a normal BMI which was 62.2%.

Researchers then examined the relationship between dietary, physical activity and genetic history variables with BMI and the results of this study indicated that there was a significant relationship between genetic history and BMI, one of which was obesity.

Meanwhile, other variables such as types of fast food online, frequency of eating fast food online, the number of online fast food meals, and physical activity did not have a significant relationship.

This is due to various factors, such as a homogeneous sample where on average the respondents are not obese, then it is also influenced by the pandemic where respondents have the same frequency of ordering fast food online, the physical activity of the respondents has also decreased, both those who are obese and not obesity due to the pandemic making students sit at home more, besides that the

types of food studied only focused on fast food online food only, did not look at diet in 24 hours.

Based on the results obtained, the researcher has suggestions that can be considered so that readers and especially at X university students are not at great risk of obesity, namely by paying more attention to the pattern of fast food consumption in the future, a lot of physical activity, especially for those who have a genetic history of obesity and are obese, for Those who are not obese should maintain their nutritional status if they are not obese, by adopting a healthy lifestyle to avoid other obesity-causing factors.

The results of this study are also expected to be used as a source of information for nursing and related science, regarding the impact of excessive fast food online eating. The results of this study are also expected to be used as a source of basic data for other researchers to conduct further research on the online fast food diet.

In addition, further researchers are expected to be able to conduct research by looking at more types of fast food online, or added with local types of fast food online (traditional fast food). Future researchers can also examine the consumption of food within 24 hours, in addition to the fast food consumed. Further researchers can also examine other variables that have not been carried out in this study which are related to obesity, such as work, and consumption of cigarettes and alcoholic beverages.

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