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Original Research

The Relationship Between Fast Food Consumption with Obesity in Woman of Childbearing Age in Bandung

Hubungan Konsumsi Fast-Food dengan Kejadian Obesitas pada Wanita Usia Subur di Kota Bandung

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Abstract: *Obesity is one of the nutritional problems that occur in Indonesia where the prevalence continues to increase every year. The prevalence of obesity in Indonesia is higher in the female group compared to the male group. Obesity that occurs in women, especially in women of childbearing age can cause health problems such as irregular menstrual cycles, PCOS (Polycystic Ovary Syndrome) and even miscarriage in pregnancy. One of the factors that increase the risk of obesity is the frequency of consuming fast food. This study aims to determine the relationship between fast food consumption and obesity in women of childbearing age in Bandung. The type of research used in this study is cross sectional with research subjects are women aged 15-49 years. This research was conducted in Bandung with total 155 respondents as the sample. Analysis of the data was use chi square analysis. The results of this study indicate that there is a significant relationship between fast food consumption and the incidence of obesity in women of childbearing age in Bandung (P = 0.007). The conclusion of this study is that there is a relationship between the fast-food consumption and the incidence of obesity in women of childbearing age in Bandung.*

Kata kunci: *obesity, fast-food, woman of childbearing age,* Bandung.

1. INTRODUCTION

Nutritional problems are one of the health problems that occur in Indonesia. The economic progress and changes in food consumption patterns have led to an increase in overnutrition problems in Indonesia (1). Obesity is an overnutrition problem which the prevalence keep continues to increase every year (2). The Covid-19 pandemic has also caused an increase of obesity compared to before the pandemic. The average of weight gain that occurred during the pandemic was 2.8 kg, this resulted in changes in nutritional status and the prevalence of obesity increased during the pandemic (3,4).

One of the risk factors for obesity is food intake, especially food intake that exceeds daily needs. Without realizing it, modernization has influenced people's lifestyles and even the diets. Food that is prepared quickly and instantly is easy to find. This causes more people choose to buy fast food because it is faster and easier to obtain. In general, the composition of fast food is high in energy, high in fat including cholesterol, high in salt and low in fiber. This food consumption pattern causes obesity (5). In Bandung, fast food restaurants are very easy to find, this is what causes people consume fast food as a habit to fulfill their food needs. The results of the preliminary study showed that 67.3% of respondents consumed fast food as a snack and 32.7% consumed fast food as a main meal.

Based on a research result, the prevalence of obesity in adults aged > 18 years in Indonesia is 21.8% while in Bandung itself the prevalence of obesity in adults is 23.8% (6). Obesity is also more common in women because women generally have more bodies fat than men. This is in accordance with the situation in the field where the prevalence of obesity in Bandung is higher in women (33.70%) compared to men (14.51%) (6). Women of childbearing age are the age group with reproductive organs that are still functioning properly. The impact of obesity in women of childbearing age is the occurrence of infertility in women due to anovulation, irregular menstrual cycles, Polycystic Ovary Syndrome (PCOS), breast cancer and increased risk of miscarriage, even fetal death (7). There is a health effect on obesity in women and consuming fast food is one of the incidences of obesity, so research on the relationship between fast food consumption and the incidence of obesity in women of childbearing age in Bandung is important to do.

2. METHODS

The type of research used in this study is quantitative research with a cross sectional design. This research is located in Bandung and the research was conducted in December 2021 – January 2022. The sample in this study were women of childbearing age with an age range of 15-49 years using a sampling technique, namely quota sampling. The number of samples used in this study were 155 respondents. The inclusion criteria for the sample in this study were women aged 15-49 years, living in Bandung, and willing to be respondents. Then the inclusion criteria in this study were not willing to be a respondent, were under treatment or a certain diet and were taking hormonal drugs. Data was collected by distributing research questionnaires. Data were analyzed using the STATA application, univariate analysis was carried out to see the distribution of respondent's characteristics, the frequency of consumption of fast food and the incidence of obesity in respondents. Bivariate analysis using chi square test to determine the relationship between the two variables.

3. RESULTS

The results showed that the distribution of the characteristics of respondents according to age groups are: the age of 15-20 years (17.42%), age 21-30 years (65.80%), age 31-40 years (8.39%) and age 41-49 years (8 ,39%). The distribution of respondent characteristics according to marital status is 81.94% unmarried, 16.13% married and 1.94% divorced. The distribution of respondents based on their last education is 1.29% of respondents have the last education in junior high school, 70.97% of respondents have the last education in high school, 0.65% of respondents have the last education in D1, 5.81% of respondents have the last education in D3 and 21.29% of respondents have the latest education in D4/S1. The distribution of respondents' characteristics can be seen in table 1.

Table 1. The Distribution of Respondent's Characteristic

Characteristic	Frequency	
	N	%
Age		
15-20	27	17,42
21-30	102	65,80
31-40	13	8,39
41-49	13	8,39

Total	155	100
Marital Status		
Unmarried	127	81,94
Married	25	16,13
Divorced	3	1,94
Total	155	100
Education		
Junior High School	2	1,29
Senior High School	110	70,97
Diploma 1	1	0,65
Diploma 3	9	5,81
Diploma 4/Bachelor	33	21,29
Total	155	100

Nutritional status is a characteristic of respondents who are categorized based on the measurement of BMI (body mass index) by age (BMI/U). Nutritional status has two categories, namely obesity and not obesity. The distribution of nutritional status categories is 50.32% were obese and 49.68% were not obese. These results can be seen in table 2.

Table 2. The Distribution of Nutritional Status

Nutritional Status	Frequency	
	N	%
Not Obesity	77	49,68
Obesity	78	50,32
Total	155	100

The frequency distribution of fast food consumption is categorized into 2 groups, infrequent (<2x a week) and frequent (>2x a week). There are 40% of respondents infrequent eat fast food and 60% of respondents frequent eat fast food. The frequency distribution of fast food consumption can be seen in table 3.

Table 3. The Distribution of Fast Food Consumption

Fast Food Consumption	Frequency	
	N	%
Infrequent	62	40
Frequent	93	60
Total	155	100

The category of respondent's physical activity was divided into three categories, with a value of 1.40-1.69 in the light category, 1.70-1.99 in the moderate category and 2.00-2.40 in the heavy category. Based on the calculation results, the average physical activity of the respondents is 1.90 which is included in the moderate category. These results can be seen in table 4.

Table 4. The Distribution of Physical Activity

Variable	Obs	Mean	Std. Dev	Min	Max
Physical Activity	155	1,907484	0,3298851	1,40	2,40

The relationship between fast food consumption and the incidence of obesity which was tested using the chi square test can be seen in table 5, where the p-values are 0.007 ($p < 0.05$). This shows that there is a significant relationship between the consumption

of fast food and the incidence of obesity in women of childbearing age, where as many as 59.14% of respondents who frequent consume fast food are obese and as many as 40.86% of respondents who are obese infrequent eat fast food.

Table 5. The Relationship Between Fast Food and Obesity

Fast Food Consumption	Obesity Insidence				Total		P-value
	Not obesity		Obesity				
	N	%	N	%	N	%	
Infrequent	39	62,90	23	37,10	62	100	0,007
Frequent	38	40,86	55	59,14	93	100	
Total	77	52	78	50,32	155	100	

Physical activity is one of the variables that can interfere with the results in this study. Then the analysis of the relationship between physical activity and the incidence of obesity was carried out to determine whether physical activity affects the incidence of obesity in women of childbearing age. The results of the Spearman rank correlation test in table 6 show a p-value of 0.0889 > 0.05.

Table 6. The Correlation Between Physical Activity with Obesty

Variables	R	P-value
Physical Activity Obesity	0,1371	0,0889

Based on these results, it can be concluded that physical activity is not associated with the incidence of obesity. The multivariate analysis conducted in this study showed that there was a relationship between consumption of fast food and the incidence of obesity with a p-value of 0.008 <0.05 and there was no relationship between physical activity and the incidence of obesity with a p-value of 0.187. These results can be seen in table 7.

Table 4. The Distribution of Physical Activity

Obesity	Coef	Std. Err	T	P-value	95% CI
Fast Food	0,2167489	0,804132	2,70	0,008	0,058-0,376
Obesity	0,94834	0,0715952	1,32	0,187	0,047-0,236

4. DISCUSSION

Based on the results of research on women of childbearing age in Bandung, the results of the nutritional status of respondents can be seen in table 2 and it is known that 50.32% of respondents are obese. Nutritional status is one of the important factors to achieve optimal health. If person has a nutritional intake that is in accordance with their needs, they will have a good nutritional status. Insufficient nutritional intake can also affect nutritional status to be bad, on the contrary if the nutritional intake exceeds daily needs will be at risk of experiencing excess nutrition (8). Fast food consumption is the independent variable in this study, based on table 3 it is known that 93 respondents (60%) consume fast food in the frequent category (> 2x/week). The types of fast food consumed by respondents in this study were fried chicken, pizza and hamburgers. These types of fast food generally contain high calories and fat but low in fiber. During

the Covid-19 pandemic, the frequency of fast food consumption increased by 40.6% compared to before the pandemic (9).

Characteristics of respondents based on physical activity as described in table 4 can be seen that the average of respondent has a physical activity value of 1.90 with a moderate category. The majority of respondents do sports every week such as badminton, jogging and cycling for at least 1 hour. In addition, respondents also do more physical activity inside the house than outside the house.

Based on the results of the study in table 5, it shows that the proportion of obesity in women of childbearing age is higher for those who frequent consume fast food (59.14%) compared to women of childbearing age who infrequent eat fast food (37.10%). The results of the bivariate analysis using the chi-square test obtained a p-value of 0.007. Based on these results, it can be concluded that there is a relationship between the fast food consumption and the incidence of obesity in women of childbearing age in Bandung. Multivariate analysis was also carried out to find out further results regarding the relationship between fast food consumption and the incidence of obesity. Based on the results of linear regression analysis, p-value of 0.007 <0.05, it can be concluded that there is a significant relationship between fast food consumption and obesity in this study.

The results in this study are in line with research conducted by Banik et al., (2020), where 29.9% of respondents who are obese frequent consume fast food. In this study, it was found that 1 in 3 respondents consumed fast food 3 or more times a week. In addition, the frequency of consumption of fast food also has a relationship with the incidence of obesity. In addition, this research is also in line with research conducted by Bhutani et al., (2018) that the frequency of consumption of fast food has a significant relationship with the incidence of obesity. In this study, it was explained that the estimated increase in BMI of 0.8 kg/m2 occurred in one increase in fast food consumption in one week.

Consumption of fast food is one of the risks of obesity because fast food has a high calorie and salt content. In addition, fast food also contains substances which when consumed in excess have an adverse impact on health such as cholesterol. Currently fast food is very easy to get, especially in urban areas (10). Someone who has a frequency of consuming fast food in the frequent category has a 2.47 times higher risk of being obese compared to people who infrequent eat fast food (11).

Based on the results of the Spearman rank correlation test analysis in table 7 with a p-value of 0.0889 > 0.05, it was found that there was no relationship between physical activity and the incidence of obesity in women of childbearing age in Bandung. In addition, multivariate analysis was conducted to further analyze the relationship between physical activity and the incidence of obesity. The results of linear regression analysis showed p-value 0.187 > 0.05 which indicates there is no relationship between physical activity and obesity.

The results of this study are in line with research conducted by Novitasary, (2013) where there is no relationship between physical activity and the incidence of obesity in women of childbearing age. Most of the respondents in this study were housewives who only carried out routine activities such as cooking, washing dishes, ironing, and none of the respondents did sports. However, on average, respondents do more physical activities outside the home such as walking compared to using Novitasary vehicles (2013). This study is also in line with research conducted by Christianto et al., (2018) where there is no significant relationship between physical activity and the incidence of obesity.

However, this study is contradicts with the research conducted by Puspitasari, (2018). Based on the results of this study, it is known that physical activity has a significant relationship with obesity. Respondents with light-moderate physical

activity were 2.4 times more likely to experience central obesity than those who did strenuous physical activity. Differences in research results may occur due to different patterns of physical activity. In this study, the respondents carried out home activities that were carried out repeatedly. Although the respondents did sports activities, but because of the low intensity of the exercise, it could affect the results of the study.

5. CONCLUSION

Based on the results of research conducted on 155 respondents, it was found that the incidence of obesity in women of childbearing age in Bandung was 78 respondents (50.32%), the frequency of fast food consumption in women of childbearing age in Bandung was mostly frequent (>2x/week) with the number of respondents as many as 92 respondents (60%), and there is a relationship between the consumption of fast food with the incidence of obesity in women of childbearing age in Bandung with a p-value of 0.007.

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