

ARTIKEL PENELITIAN

Fast Food Consumption, Physical Activity, and Overweight Prevalence during Covid-19 Pandemic

Konsumsi Fast-Food, Aktivitas Fisik, dan Prevalensi Overweight saat Pandemi Covid-19

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Abstract

During the Covid-19 pandemic, the community's physical activity decreased while fast food is preferable. The imbalance in energy intake could lead to triggering an excess nutritional status. The purpose of the study was to analyze the association between fast-food consumption and physical activity on the nutritional status of students during the Covid-19 pandemic. A cross-sectional study with accidental sampling among 84 students at one of the private Universities located in East Jakarta was conducted. The data were nutritional status, fast-food consumption, and physical activity. Statistical analysis was a chi-square test. Almost one-third of students were overweight (29,8%), more than half of them had low physical activity levels (51,2%) and frequently consumed fast-food (57,2%). Both fast food consumption and physical activity were not different between students with a normal nutritional status and overweight during the Pandemic (p -value>0,05). This concluded that the trend of consuming fast food while performing low physical activity occurred not only for those with overweight but those who have normal nutritional status.

Keywords: covid-19, fast-food, physical activity, student

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Abstrak

Selama pandemi Covid-19 aktivitas fisik menurun sedangkan makanan cepat saji digemari oleh mahasiswa. Kurangnya aktivitas fisik dan ketidakseimbangan antara asupan energi dengan energi yang digunakan tubuh dapat memicu status gizi lebih. Tujuan penelitian menganalisis hubungan antara konsumsi pangan siap saji dan aktifitas fisik terhadap status gizi lebih pada mahasiswa selama pandemi Covid-19. Penelitian ini menggunakan desain cross sectional dengan teknik *accidental sampling* terhadap 84 mahasiswa di salah satu Universitas swasta yang berlokasi di Jakarta Timur. Data yang dikumpulkan yaitu status gizi, konsumsi pangan siap saji, dan aktivitas fisik. Analisis statistik menggunakan uji *chi-square* antara hubungan konsumsi pangan siap saji dan aktivitas fisik terhadap status gizi lebih. Prevalensi mahasiswa mengalami gizi lebih yaitu 29,8%, tingkat aktivitas fisik mahasiswa ringan 51,2% dan konsumsi *fast food* sering 57,2%. Baik mahasiswa dengan status gizi normal dan lebih tidak memiliki perbedaan yang signifikan terhadap konsumsi makanan siap saji dan aktivitas fisik ringan ($p\text{-value}>0,05$). Hasil tersebut menandakan bahwa peningkatan trend konsumsi makanan siap saji dan penurunan aktivitas fisik terjadi di seluruh mahasiswa, tidak hanya pada mereka yang mengalami *overweight* tetapi juga yang memiliki status gizi normal.

Kata Kunci: *covid-19, fast-food, aktivitas fisik, mahasiswa*

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INTRODUCTION

Covid-19 started to spread to all countries including Indonesia at the end of 2019. According to the World Health Organization (WHO) on April 6th, 2020, the number of confirmed cases in the world was 1.278.523. From 1,2 million positive cases, Covid-19 caused 69,757 deaths (WHO, 2020a). The death rate of Covid-19 patients also continued increasing. Its transmission which is quick and easy through droplets from an infected patient's mouth and nose made a sufficient countermeasure necessary. Therefore, to minimize the transmission of Covid-19, the government obliges the community to perform a hygienic behavior (PHBS) by washing hands with soap, wearing masks, and maintaining physical distance (Zukmadini *et al.*, 2020).

The government restrictions on outdoor activities were implemented during the Covid-19 pandemic. This indirectly caused changes in people's lifestyles, for instance, decreasing their physical activity level. Besides this fact, the physical activity in Indonesia is already low at 33.5% even before the pandemic (Basic Health Research, 2018). WHO (World Health Organization) stated that 31% of adolescents (>15 years) were not physically active (WHO, 2020b). The decline in physical activity was followed by an increase in sedentary behavior. The unbalance between energy intake and expenditure could lead to a positive energy balance and caused excess nutritional status (Ermona and Wirjatmadi, 2018).

The prevalence of overweight has increased from 11.5% in 2013 to 13.6 % in 2018, and obesity from 14,8% in 2013 to 1,8% in 2018 (Basic Health Research, 2013, 2018). In Jakarta, the proportion of overweight and obesity among adults 19–64 years is above the national average, 14,0% for overweight (Indonesia 11,5%) and 29,8% for obesity (Indonesia 21,8%) (Sukianto *et al.*, 2020). At the same time, Indonesia is one of

the developing countries that experienced a shift in their eating patterns, from traditional to modern food such as fried foods, instant noodles, fried chicken, French fries, burgers, etc (Liberali *et al.*, 2020).

Fast food which contained high energy, cholesterol, and sodium was a risk factor for overweight or obesity (Bahadoran *et al.*, 2015). However, whether the consumption of fast food and level of activity level could affect the prevalence of overweight among adolescents during lockdown was still unknown. Therefore, this study aimed to analyze the association between fast-food consumption and physical activity on college students' nutritional status during the pandemic in a private University in Jakarta.

METHODS

This is a cross-sectional study with an accidental sampling method, conducted at one private University in East Jakarta from May to June 2021. 84 students from the University, based on minimum sampling calculations were recruited for the study. The sample size calculation used two proportion groups with $Z\alpha$: 1.96 and $Z\beta$: 0.84. Referred to Resky (Nur *et al.*, 2019), a college student who often consumed fast food and became obese was 72% (P1) and those who rarely consumed fast food but became obese were 28% (P2).

Data collection covered subject characteristics, nutritional status, fast-food consumption, and physical activity. Subject characteristics such as age, gender, monthly allowance from parents, and parental education were collected by filling out a structured questionnaire. Height was measured using a microtome and weight was measured using a digital weight scale. The calculation and classification of Body Mass Index (BMI) referred to WHO guidelines. BMI more than 25 were classified as overweight. Fast-food consumption was measured using the Food Frequency Questionnaire (FFQ) for fast food and Physical activity was using the PAL questionnaire.

Statistical analysis was performed using the SPSS 16. Univariate analysis was to identify the frequency of respondent characteristics and dependent and independent variables. Meanwhile, the bivariate analysis used the chi-square test. This study has passed the research ethics review from the National Development University "Veterans" Jakarta, Health Research Ethics Commission 428/VIII/2021/KEPK.

RESULT AND DISCUSSION

Participant characteristics of this study are shown in Table 1. Students with normal nutritional status were 59 students (70,2%) and that overweight was 25 students (29,8%). Most of them were 21 years old (45,2%) and female students (91,7%). Eighty-two percent of students were from high-income households and the rest were from low-income households. Respondent's monthly allowance was more than Rp 1.000.000/month (52,4%) and less than Rp 1.000.000/month (47,6%). Subjects often consumed fast-food (57,2%), and only 42,8% of them rarely consumed fast food. 80.9% had low physical activity, and 19,1% had moderate physical activity.

Table 1. Participant characteristics (n=84)

Variable	n	%
Nutritional status:		
Normal	59	70,2
Overweight	25	29,8
Age:		
20 years old	22	26,2
21 years old	38	45,2
22 years old	24	28,6
Gender:		
Male	7	8,3
Female	77	91,7
Family income:		
< Rp. 4.400.000	15	17,9
≥ Rp.4.400.000	69	82,1
Monthly allowance:		
< Rp. 1.000.000	44	52,4
≥ Rp. 1.000.000	40	47,6
Fast-food consumption:		
Rare	36	42,8
Often	48	57,2
Physical Activity		
Light	68	80,9
Moderate	16	19,1

Source: Primary data, 2021

Further analysis showed that both students with normal nutritional status and with overweight have no difference in the frequency of fast-food consumption (p -value=0,073). The student with normal nutritional status (35,7%) and overweight (21,4%) often consumed fast food during the pandemic (Table 2). Both groups also had no difference in physical activity (p -value=0,0643), with most of them having a light activity level (80,9%).

Table 2. Association of fast-food consumption and physical activity on college student nutritional status

Variable	Normal n (%)	Overweight n (%)	p-value
Fast-food consumption			
Rare	29 (34,5)	7 (8,3)	0,073
Often	30 (35,7)	18 (21,4)	
Physical activity			
Light	47 (55,9)	21 (25)	0,0643
Moderate	12 (14,3)	4 (4,8)	

Note: Significant is p-value <0,05; chi-square test

Being overweight and obese had been a concern since a decade ago in many developing countries, including Indonesia. In this study, the prevalence of overweight among students was 29,8% (Table 1). The result indicated a high trend, compared to data from 2014 among communities in the age of 19-29 years old (11,4%-25,4%) and 2018 (13,6%) (Basic Health Research, 2018; Oddo *et al.*, 2019). The prevalence was also higher than those in urban Asia (16,9%) (Mazidi *et al.*, 2018). This trend also has been predicted would occur among children, adolescents, and young adults during the Covid-19 Pandemic (Stavridou *et al.*, 2021). Interestingly, there was no significant association between fast food consumption and physical activity among students on their nutritional status (Table 2). The accessible online food service application through a smartphone, a tight yet frequent schedule in online classroom obliged them to spend about 6-8 hours in front of the computer triggers them to consume an instant fast-food (Nagata *et al.*, 2020).

This study showed that both normal and overweight students had a similar eating preference for fast food. It had been mentioned by a previous study that fried food and sweets were preferably consumed with an increase to 20.7% among adolescents during lockdown causing a higher BMI (Ruiz-Roso *et al.*, 2020). However, it does not mean that fast food is only consumed by those whose BMI was overweight. As stated by Banik *et al.* (2020), the distribution of fast food consumption based on BMI shows that students with normal nutritional status (35,6%) and overweight (27,7%) were fast-food consumers. Besides their tasty flavor, the fast-food delivery service in the catering business that could guarantee the food safety during Covid-19 also led to consumers' perceived trust (Muangmee *et al.*, 2021). Further, a previous study also showed that fast-food consumption was not associated with overall individual BMI; but significantly caused abdominal obesity (Mohammadbeigi *et al.*, 2018). Frequent consumption of sweetened foods and drinks, meat, and eggs were other determinants of overweight (Teshale *et al.*, 2019). Although, there was no significant association found in this study. Students with normal nutritional status might also experience weight gain when this habit continues (Brooks and Moore, 2016).

The physical activity level among students was almost homogenous, the majority of them rarely had a vigorous activity level (Table 1). The government policy to close the school including a University during the COVID-19 pandemic was compulsory to prevent the infection. This policy had created changes in student lifestyle, where they

should attend remote lessons rather than a face-to-face classroom setting during the lockdown (Nagata *et al.*, 2020).

Physical activity during the pandemic in young adults had decreased during the pandemic (Huber *et al.*, 2020). The community started to perform a WFH (Work From Home) and SFH (Study From Home) due to the social distancing period. Sedentary behavior had become common. Students tend to have longer screen times and often had unhealthy snacking than healthy food during the pandemic. As a result, this prolonged unhealthy lifestyle could cause obesity and degenerative diseases (Ardella, 2020; Stavridou *et al.*, 2021). In fact that overweight was one of the factors leading to more severe Covid-19 symptoms (12,8%) than normal ones (2,9%) (Wang *et al.*, 2020), the maintenance of healthy food consumption is obligatory.

Besides these two factors, it should also be noted that being overweight might be associated with multiple factors. The psychological condition of adolescents, eating habits before the lockdown, and household socioeconomic conditions could be other determinants of their nutritional status (Manyanga *et al.*, 2014; Adetunji *et al.*, 2019; Yousif *et al.*, 2019; Afrin *et al.*, 2022). This study still has limitations, since the study result only focuses on one particular population that cannot be generalized to the whole community, a more comprehensive analysis was necessary.

CONCLUSION

Fast-food consumption and physical activity had no significant association with the nutritional status of a college student. Even so, maintaining a healthy diet and improving physical activity level was necessarily important. It is to prevent a student with normal nutritional status gained more weight during pandemic Covid-19 and to prevent the severe infection of Covid-19.

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CONFLICT OF INTEREST

This study no contain any conflict of interest

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