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The Relationship of Fas Food Consumption and Obesity

THE RELATIONSHIP OF FAST FOOD CONSUMPTION AND OBESITY IN ADULT SOCIETY AT PEKAN LABUHAN HEALTH CENTER, MEDAN, INDONESIA

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ABSTRACT

Obesity is defined as an excessive accumulation of body fat resulting from a prolonged imbalance between energy intake and energy expenditure, which may lead to various physical and psychosocial health complications. In Indonesia, the prevalence of adult obesity has reached approximately 22%, affecting around 625,000 individuals. One primary contributing factor to weight gain is the frequent consumption of high-calorie foods, such as sugary beverages, fast food, and items with a high glycemic index. This study investigated the association between fast food consumption and obesity among adults. An analytical cross-sectional study involved adult participants at the Pekan Labuhan Community Health Center in Medan who met specific inclusion and exclusion criteria. Data were obtained through structured interviews to assess the frequency of fast food consumption, alongside anthropometric measurements, including body weight, height, and calculation of Body Mass Index (BMI). The results indicated that 63% of the adult population in this community health center were classified as obese, and 72% reported frequent fast food consumption. Statistical analysis using the Pearson correlation test demonstrated a significant relationship between fast food consumption and obesity (p=0.001). The findings suggest that a higher frequency of fast food intake is significantly associated with increased obesity risk. These results underscore the importance of dietary education and public health strategies aimed at reducing fast food consumption to combat the rising prevalence of obesity.

Highlights :

1. To determine the relationship between the frequency of fast food consumption and the incidence of obesity in the Pekan Labuhan Health Center, Medan, Indonesia, in the adult community.
2. To determine the nutritional status of the people of Pekan Labuhan, Medan, Indonesia.

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INTRODUCTION

Obesity is when excessive fat accumulates due to an imbalance between energy intake and expenditure over time[1]. The increasing prevalence of obesity has made it a significant public health problem[2]. In the last 30 years, the figure for obesity increased to 47.1% in adolescents and 27.5% in adults. The incidence of obesity has increased, with more than 400 million people worldwide experiencing obesity. According to WHO, obesity in people from the Asia-Pacific region is characterized using Body Mass Index (BMI) measurements, with results of ≥ 25 kg/m^2 [3].

In low and middle-income countries, overweight and obesity rates are increasing, especially in urban areas. A study conducted in China revealed that the prevalence of obesity in 12,543 participants monitored for 22 years increased from 2.15 to 13.99% in both sexes, adjusted for age, namely in women from 2,78 to 13.22%. And man from 1.46 to 14.99%[4]. Based on data from an Adult Health study in Indonesia in 2018, it was found that 22% or around 625,000 adults in Indonesia were obese[5]. Obesity is a problem that causes several chronic diseases, such as type 2 diabetes mellitus, hypertension, stroke, coronary heart disease, cancer, and others. Apart from that, the increase in death rates is also due to the many diseases caused by obesity[6].

Most people consider fast food the right solution to meet their daily food needs. Apart from its practicality, the promotion of modern food management has caused fast food to be valued as nutritious. Fast food is high in calories, fat, salt, sugar, and additives that can cause weight gain, such as fizzy drinks, fast food, and foods with a high glycemic index, often found in urban areas[7].

MATERIALS AND METHODS

This study is an analytical study with a cross-sectional design to look at the relationship between fast food consumption and the incidence of obesity in adult society at Pekan Labuhan Health Center, Medan City. The study uses a questionnaire that has been used by several researchers in Indonesia and has been tested for validation and reliability. This research was conducted at the Pekan Labuhan Health Center, Medan, Indonesia. This research was carried out from January to February 2024.

The population in this study was adults living in the Pekan Labuhan Community Health Center, Medan, Indonesia. The inclusion criteria for this research sample are adults aged 26-45 years who do not have a history of diabetes mellitus, hypercholesterolemia, and hypertension and do not take drugs that cause obesity, such as paroxetine, valproic acid, amitriptyline, insulin, and prednisone, which are assessed based on the history taking.

BMI assessment criteria are based on the Asia-Pacific assessment with a range of underweight ($<18,5$kg/m^2), standard (18.5–22.9 kg/m^2), overweight (≥ 23 kg/m^2), obesity grade 1 (18.5 – 22.9 kg/m^2), and obesity grade 2(≥ 30kg/m^2). The infrequency of fast food consumption is <45, while the frequency is ≥ 45.

This research has received ethical approval from the Health Research Ethics Committee of Universitas Sumatera Utara on February 16, 2024, number 133/KEPK/USU/2024.

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RESULTS

Table 1. Subject Characteristics.

Variable	(n=88)	p-value
Age, n (%)		
Early adult	41 (41%)	
Late adult	59 (59%)	
Sex, n (%)		
Man	43 (43%)	
Woman	57 (57%)	
Weight, kg	65.43 (38-105)	0,133[1]
Height, cm	157.81 (± 8.544)	0,200[1]
Nutritional status, n (%)		
Underweight	8 (8%)	
Normoweight	17 (17%)	
Overweight	12 (19.3%)	
Obesity grade1	37 (21.6%)	
Obesity grade2	26 (14.8%)	
Fast food consumption, n(%)		
Infrequently	28 (28%)	
Frequently	72 (72%)	

Note : [1] Kolmogorov-Smirnov test

Based on **Table 1**, 41% of respondents were in early adulthood, and 59% were in late adulthood. More Female respondents (57%) than male respondents (43%). The nutritional status of the respondent's average body weight is 65.43 kg, and the average body height is 157.81 cm. There were 37 respondents in obesity grade 1 and 26 in obesity grade 2. As for the criteria for the frequency of consuming fast food, 28 respondents were infrequent (28%), and 72 respondents were frequent (72%).

Table 2 shows that respondents who frequently consume fast food are more obese than respondents who rarely consume fast food, namely 57% and 6%. The Spearman correlation test results obtained a p-value of 0.001 ($p < 0.05$), which shows a relationship between fast food consumption and obesity in adult society. The Spearman correlation test results obtained an r-value of 0.489, which shows that the relationship between fast food consumption and obesity is moderately correlated.

Table 2. Relationship between the Frequency of Fast Food Consumption and Obesity

Nutritional Status	Consumption frequency				Total		p-Value	r-Value
	Infrequently		Frequently					
	n	%	n	%	n	%		
Underweight	4	4	4	4	8	8	0.001[1]	0.489[1]
Normoweight	11	11	6	6	17	17		
Overweight	7	7	5	5	12	12		
Obesity grade1	5	5	32	32	37	37		
Obesity grade 2	1	1	25	25	26	26		
Total	28	28	72	72	100	100		

Note : [1] Pearson Correlation Test

DISCUSSION

The results of this study show that the prevalence of overweight, obesity 1, and obesity 2 in late adulthood is 58.3%, 70.3%, and 69.2%. This is in line with research conducted by Septiyanti and

Seniwati in 2020, which showed that the incidence of obesity increases with age, with the highest prevalence occurring at the age of 40-59 years. Based on the age range, the highest prevalence of obesity is in late adulthood, namely 44 %. This is in line with research conducted by Septiyanti et al that

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the prevalence of obesity was highest in late adulthood, at 51%[8].

In this study, it was found that based on gender, more women were obese than men, namely 38.0% of women and 25% of men. This is in line with research conducted in 2020 at Malahayati University, which showed that the highest prevalence of obesity was in female respondents (71.4%) rather than male respondents (20.0%). This can be attributed to a woman's metabolism being slower than men's, where a woman's basal metabolism is 10% lower than men's[9,10]. This is because women have a body composition with more fat composition, less physical activity, and menopausal status, which is correlated with hormonal disorders[11,12]. The results of this study show that the prevalence of respondents who consume fast food more often is higher among respondents in the late adult age range, namely 61.1%. This is in line with the prevalence of overweight, obesity 1, and obesity 2 in this study, which occurs more often in the late adult age range. Consuming excessive fast food can increase the risk of obesity.

This study's results state a significant relationship between the frequency of fast food consumption and obesity in adults (P-value = 0.001). These results align with research conducted by Salsabilla N in 2023, where consuming fast food with high frequency increased the risk of experiencing obesity by 2.03 times of experiencing obesity compared to those who rarely consumed fast food[13]. Likewise, with research in 2017 in Banjarbaru, the percentage of obesity in respondents who frequently consume fast food is 22 people (78.6%), while in respondents who rarely consume fast food, it is two people (7.1%)[14]. Obesity can occur due to obsessive-compulsive behavior towards food, so obesity is related to a person's pattern or behavior regarding excessive food consumption, such as consuming fast food[15,16]. Fast food is more widely consumed because it is considered more practical, easier to obtain, and has many variations[17]. Fast food is high in fat, salt, and sugar, as well as additives and synthetic additives, so it has the potential to increase the risk of obesity[18,19]. This is because the content of fast food is high in calories, high in sugar, and low in fibre, so if consumed excessively, it can cause overnutrition or obesity[20]. The foods residents often eat in the Pekan Labuhan Public Health Center, Medan, Indonesia working area are meatballs, chicken noodles, and instant noodles.

Strengths and limitations

This research describes the nutritional status and consumption patterns of fast food among the people of Pekan Labuhan, Medan City. The average patient lives in coastal areas with poor dietary knowledge, especially regarding healthy food preparation, and tends to consume fast food. This research needs to be continued to find out the types of food and the number of calories for each food consumed by the adult population of Pekan Labuhan, Medan, Indonesia.

CONCLUSION

There is a relationship between the frequency of fast food consumption and obesity in the adult society of Pekan Labuhan Health Center, Medan, Indonesia.

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CONFLICT OF INTEREST

Nothing to declare.

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AUTHOR CONTRIBUTION

All authors have contributed to all processes in this research, including preparation, data gathering, analysis, drafting, and approval for publication of this manuscript.

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