

COVER



The Relationship Between the Frequency of Fast Food Consumption and Blood Pressure in Students

PDF

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Abstract

Hypertension affects adults, children, and adolescents, with high mortality and morbidity rates. Modifiable causes of hypertension include mental stress and diet. Frequent consumption of fast food, which is high in energy, saturated fat, salt, and low in fiber, can increase blood pressure and the risk of hypertension. This study aimed to determine the relationship between frequency of fast food consumption and blood pressure among students at SDN 7 Rejang Lebong, using a cross-sectional analytical method. Of the 123 respondents, 40 rarely consumed fast food, divided into 35 with normal blood pressure and 5 with high blood pressure. Of the 83 respondents who frequently consumed fast food, 72 had normal blood pressure and 11 with high blood pressure. There was no relationship between frequency of fast food consumption and blood pressure among students at SDN 7 Rejang Lebong.

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The Relationship Between the Frequency of Fast Food Consumption and Blood Pressure in Students

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Fast food consumption;
Blood pressure;
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ABSTRACT:

Hypertension affects adults, children, and adolescents, with high mortality and morbidity rates. Modifiable causes of hypertension include mental stress and diet. Frequent consumption of fast food, which is high in energy, saturated fat, salt, and low in fiber, can increase blood pressure and the risk of hypertension. This study aimed to determine the relationship between frequency of fast food consumption and blood pressure among students at SDN 7 Rejang Lebong, using a cross-sectional analytical method. Of the 123 respondents, 40 rarely consumed fast food, divided into 35 with normal blood pressure and 5 with high blood pressure. Of the 83 respondents who frequently consumed fast food, 72 had normal blood pressure and 11 with high blood pressure. There was no relationship between frequency of fast food consumption and blood pressure among students at SDN 7 Rejang Lebong.

INTRODUCTION

Hypertension affects adults, children, and adolescents and is associated with high morbidity and mortality rates. Several modifiable factors contribute to hypertension, including mental stress and dietary habits.

Diets characterized by high energy intake, saturated fat, salt, and low fiber commonly found in fast food can increase blood pressure and elevate the risk of hypertension.

Hypertension is a medical condition in which arterial blood pressure persistently increases to $\geq 140/90$ mmHg.

It is often referred to as the "silent killer" because it frequently presents without symptoms, yet it places excessive strain on the heart and can lead to serious

complications such as stroke, myocardial infarction, and kidney failure if left untreated. Management of hypertension focuses on lifestyle modification and pharmacological therapy [1].

The World Health Organization reports that high consumption of fast food increases the risk of chronic diseases, including hypertension [2]. Fast food is typically high in fat, sugar, and sodium, nutrients known to contribute to elevated blood pressure [3]. Excessive consumption of fast food has also been shown to increase the risk of hypertension among adolescents and young adults [4].

Risk factors for hypertension are classified into non-modifiable factors, such as age, sex, and genetic predisposition, and modifiable factors, including diet, physical activity, and smoking habits [5]. Previous



studies have demonstrated that frequent consumption of foods high in energy, saturated fat, sodium, and low fiber significantly increases the risk of hypertension [6]. These nutritional characteristics are commonly found in fast food, making excessive consumption a public health concern [7].

Fast food, often referred to as *junk food* due to its low nutritional value, is classified into modern and traditional types. Modern fast food includes fried chicken, French fries, hamburgers, pizza, spaghetti, sausages, and donuts, while traditional fast food includes fried noodles, instant noodles, meatballs, chicken noodles, fried snacks, siomay, soto, and pecel [8]. This study focuses exclusively on modern fast food.

A preliminary survey conducted on January 2, 2026, among students in grades 1–6 at SDN 7 Rejang Lebong, Curup Tengah, Rejang Lebong Regency, revealed that students commonly consumed and favored modern fast food items such as fried chicken, French fries, hamburgers, pizza, spaghetti, and sausages.

In general, this study aims to examine the relationship between the frequency of fast food consumption and blood pressure among students at SDN 7 Rejang Lebong. Specifically, it aims to describe the blood pressure profile of students who consume modern fast food and to analyze the association between fast food consumption frequency and blood pressure levels.

Based on this background, this study is entitled: "The Relationship Between the Frequency of Fast Food Consumption and Blood Pressure in Students."

MATERIALS AND METHODS

Tools and Materials

Data collection in this study used a Food Frequency Questionnaire, a Riester® sphygmomanometer to measure blood pressure, a height poster to measure height, and a scale to measure weight.

Research Procedure

This study uses a cross-sectional research design to see the relationship between the frequency of fast food consumption and blood pressure in students of SDN 7 Rejang Lebong. Data collection was carried out for twenty days starting from January 3, 2026 to January 22, 2026. Sampling was conducted using a purposive method with a total of 123 samples, consisting of 50 boys, with details (8 grade 3, 12 grade 4, 13 grade 5, and 17 grade 6) and 73 girls, consisting of (14 grade 3, 17 grade 4, 25 grade 5, and 17 grade 6).

The inclusion criteria were male and female students of SDN 7 Rejang Lebong aged 14–16 years, students who liked to consume modern fast food, were willing to fill out a questionnaire, and were willing to have their blood pressure measured using a sphygmomanometer.

Exclusion criteria included male and female students at SDN 7 Rejang Lebong who refused to participate in the study, regularly took hypertension medication, and had a history of heart disease.

Respondents were asked to complete a consent form and a fast food consumption frequency questionnaire, which assessed how often they consumed fast food in the past month. Afterward, blood pressure, height, and weight were measured.

In children and adolescents aged 1 to 17 years, hypertension is defined as systolic and/or diastolic blood pressure greater than or equal to the 95th percentile for age, sex, and height [9].

Table 1. Diagnostic Criteria for Hypertension in Children and Adolescents

Blood Pressure Category	Systolic and/or Diastolic Blood Pressure Percentile
Normal	< 90th percentile
Pre-hypertension	90th–95th percentile
Stage 1 hypertension	95th–99th percentile + 5 mmHg
Stage 2 hypertension	> 99th percentile + 5 mmHg

Description: Increased: systolic and/or diastolic pressure > 90th percentile for age, sex, and height.

Normal: systolic and/or diastolic pressure \leq 90th percentile for age, sex, and height.

Data Analysis

Data analysis used univariate and bivariate tests. Univariate tests were used to describe sample data, while bivariate tests were conducted to determine whether there was a relationship between two variables. The normality of data distribution was tested using the Kolmogorov–Smirnov test. For data with a normal distribution, the relationship between variables was measured using the chi-square test because both variables are categorical. For data with a non-normal distribution, the Fisher Exact test was used as an alternative [10]. The relationship between respondents' frequency of fast food consumption and their blood



pressure was analyzed using the chi-square test with $\alpha = 0.05$ and a significance level of 95%.

RESULTS AND DISCUSSION

The characteristics of respondents at SDN 7 Rejang Lebong based on gender, frequency of fast food consumption, blood pressure, and body mass index are presented in Table 2. The respondents consisted of 50 males and 73 females. Most respondents frequently consumed fast food (67.5%), while 32.5% rarely consumed fast food. Elevated blood pressure was observed in 13% of respondents, while 87% had normal blood pressure [11,12]. Regarding body mass index (BMI), 13.8% of respondents were obese, 11.4% were overweight, and 74.8% had normal BMI [13,14].

Table 2. Respondent Characteristics

Variable	Category	n (%)
Gender	Male	50 (40.65%)
	Female	73 (59.35%)
Fast Food Consumption Frequency	Rarely	40 (32.5%)
	Often	83 (67.5%)
Blood Pressure	Normal	107 (87%)
	Elevated	16 (13%)
Body Mass Index (BMI)	Normal	92 (74.8%)
	Overweight	14 (11.4%)
	Obese	17 (13.8%)

Data from male and female respondents grouped by blood pressure category are presented in Table 3. Among male respondents, 30% had elevated blood pressure and 70% had normal blood pressure. Among female respondents, 1.4% had elevated blood pressure and 98.6% had normal blood pressure. These findings are consistent with previous studies reporting higher prevalence of elevated blood pressure among male adolescents compared to females [15,16].

Table 3. Blood Pressure by Gender

Gender	Blood Pressure	n (%)
Male	Normal	35 (70%)
	Elevated	15 (30%)
Female	Normal	72 (98.6%)
	Elevated	1 (1.4%)

Data on fast food consumption frequency by gender are shown in Table 4. Among male respondents, 80% frequently consumed fast food and 20% rarely

consumed fast food. Among female respondents, 58.9% frequently consumed fast food and 41.1% rarely consumed fast food. Similar gender-based differences in fast food consumption patterns have been reported in adolescent populations [17,18].

Table 4. Frequency of Fast Food Consumption by Gender

Gender	Consumption Frequency	n (%)
Male	Often	40 (80%)
	Rarely	10 (20%)
Female	Often	43 (58.9%)
	Rarely	30 (41.1%)

The relationship between fast food consumption frequency and blood pressure is presented in Table 5.

Table 5. Relationship Between Fast Food Consumption Frequency and Blood Pressure

Fast Food Consumption Frequency	Blood Pressure Normal	Blood Pressure Elevated	Total
Rarely	35	5	40
Often	72	11	83
Total	107	16	123

After grouping the data, analysis was conducted using the Chi-Square test. The results are shown in Table 6.

Table 6. Chi-Square Test Results

Test	Value	df	Significance (p)
Pearson Chi-Square	0.014	1	0.907
Continuity Correction	0.000	1	1.000
Likelihood Ratio	0.014	1	0.907
Fisher's Exact Test	—	—	1.000 (2-sided)
Linear-by-Linear Association	0.013	1	0.908
N of Valid Cases	123		

The results showed that the majority of respondents frequently consumed fast food (67.5%). Male respondents consumed fast food more frequently than females, and elevated blood pressure was more common among males [19,20]. However, statistical analysis showed a p-value of 0.907 ($p > 0.05$), indicating no significant relationship between the



frequency of fast food consumption and blood pressure among students at SDN 7 Rejang Lebong. Similar findings have been reported in studies where fast food consumption alone was not a significant predictor of hypertension in children and adolescents [21,22].

Several factors may have influenced the results, including recall bias from questionnaire-based data collection, the “white coat” effect during blood pressure measurement, time of measurement, recent physical activity, and dietary intake before measurement [23]. The study is also limited by its cross-sectional design and the examination of only one independent variable, which limits causal inference [24].

CONCLUSION

There was no relationship between the frequency of fast food consumption and blood pressure in students at SDN 7 Rejang Lebong. This could be caused by various factors that influence blood pressure, such as genetics, individual characteristics, lifestyle, drug use, alcohol consumption, stress, and others. For future research, it is recommended to further examine other factors that may influence blood pressure in adolescents and conduct research using other research designs, such as experimental or case-control.

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