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Fast Food Consumption, Lifestyle, and Nutritional Status among Cardiac Outpatients at Kudungga Sangatta Regional General Hospital

Ermin Eriyanti[1]*, Kurniati Dwi Utami[1], Elvi Susanti[1], Saraheni[2]

*Correspondensi e-mail: chikadelia791@gmail.com

[1] *Nutrition Study Program, Health Polytechnic of the Ministry of Health, East Kalimantan, Samarinda, Indonesia*
[2] *Department of Public Health, East Kalimantan Provincial Health Office, Samarinda, Indonesia.*

ABSTRACT

Heart disease remains the primary cause of death both globally and nationally. One factor contributing to the nutritional status of cardiac patients is fast food consumption and lifestyle. However, most previous research has focused on healthy adolescent and adult populations, while research on cardiac patients with chronic clinical conditions remains limited. This study is essential, given that nutritional status management is a crucial aspect of preventing complications and improving the quality of life for cardiac patients. This research was conducted at the Cardiac Clinic of RGI Kudungga Sangatta in June 2025, employing an analytic survey design with a cross-sectional approach . Samples were determined using the accidental sampling technique on cardiac patients who met the inclusion and exclusion criteria. The dependent variable was nutritional status measured by BMI, while independent variables included fast food consumption (FFQ) and lifestyle (physical activity, dietary pattern, and smoking questionnaires) . Data analysis utilized the Chi-Square test with a 95% significance level (α = 0.05). The results showed that among 44 respondents, the majority were male (72.7%), aged 26–40 and >51 years (34.1%), and had a high school education (56.8%). Most respondents had a normal nutritional status (54.5%), rarely consumed fast food (68.2%), and possessed an unfavorable lifestyle (86.3%). Bivariate analysis indicated no significant relationship between fast food consumption and nutritional status (p=0.517; OR=1.524). However, lifestyle was significantly associated with nutritional status (p=0.018; OR=2.294), where respondents with unfavorable lifestyles were 2.3 times more likely to be obese. These findings suggest that follow-up actions, such as hospital-based nutritional counseling and healthy lifestyle education programs, are highly recommended to reduce the burden of heart disease in the region.

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KEY MESSAGES

- *Lifestyle is a key determinant of nutritional status among cardiac patients, with unhealthy lifestyle patterns increasing the risk of obesity by more than twofold.*
- *Fast food consumption was not significantly associated with nutritional status, suggesting that single dietary components may be less influential than overall lifestyle behaviors in clinical populations.*
- *Most cardiac outpatients exhibited unhealthy lifestyle patterns despite predominantly normal BMI, indicating a hidden risk for future metabolic and cardiovascular complications.*

INTRODUCTION

Cardiovascular diseases, including heart disease, are the leading cause of death worldwide as well as in Indonesia (Yonata & Pratama, 2016). According to the Global Burden of Disease Study published in The Lancet (2019), cardiovascular diseases account for more than 17.9 million deaths annually worldwide, with a continuously increasing trend (Abbafati et al., 2020). Global burden analysis studies have also shown that mortality rates due to cardiovascular disorders in men increased from 356.05 to 412.46 per 100,000 population between 2000 and 2019 (Harmadha et al., 2023). In Indonesia, ischemic heart disease and stroke rank as the top causes of death. Data from the Ministry of Health of the Republic of Indonesia in 2023 indicate that stroke accounts for 19.42% and ischemic heart disease for 14.38% of total national deaths. Overall, cardiovascular diseases are responsible for 35% of all deaths in Indonesia, surpassing infectious diseases and cancer (Ministry of Health, 2023). These findings underscore the increasing severity and burden of heart disease.

One important factor contributing to the increasing burden of heart disease is the consumption pattern of fast food and ultra-processed foods. These foods are generally high in saturated fats, sugar, and salt, which can trigger obesity, hypertension, dyslipidemia, and diabetes—major risk factors for heart disease (Srour et al., 2019a). In addition, ultra-processed foods are also associated with excessive energy intake, obesity, and metabolic diseases (Monteiro et al., 2013). A meta-analysis in The Lancet Regional Health – Americas even showed that high consumption of ultra-processed foods increases the risk of cardiovascular disease by up to 17% compared to low consumption (Mendoza et al., 2024). In Indonesia, the nutrition transition toward modern dietary patterns and ready-to-eat foods has worsened public health conditions (Arifani & Setiyaningrum, 2021). This is reflected in the increasing prevalence of obesity, hypertension, and insulin resistance (Anyanwu et al., 2022). Studies have shown that the consumption of instant noodles and sugar-sweetened beverages is associated with inflammatory markers (hs-CRP) and central obesity, particularly among urban women and men (Oddo et al., 2019). Another study in Jakarta also reported that the consumption of ultra-processed foods is positively correlated with obesity, type 2 diabetes, and hypertension, while the consumption of vegetables, fruits, and nuts has a protective effect (Sakir et al., 2024).

In East Kalimantan Province, specifically in East Kutai Regency, at the local level, RGI Kudungga Sangatta reported that heart disease was the most common condition in the outpatient clinic during 2023–2024, indicating a very high level of risk and urgency. Within one year, the number of patients reached 2,668, or an average of 222 patients per month. This substantial case burden highlights the importance of a deeper understanding of lifestyle factors and nutritional status among cardiac patients. A preliminary study conducted by the researchers through interviews with 20 cardiac patients revealed that 5 individuals had normal nutritional status, 12 were overweight, and 3 were undernourished. Among the 12 overweight patients, 9 reported still consuming fast foods such as instant noodles and fried snacks. In addition, 7 patients did not engage in physical exercise, and 5 individuals continued to smoke. These findings illustrate a combination of unhealthy dietary habits and high-risk lifestyles that need to be systematically examined in the context of nutritional status management among cardiac patients at RGI Kudungga Sangatta.

Most studies on fast food consumption and lifestyle have generally been conducted among adolescents, university students, or the general population. Meanwhile, specific research focusing on adults with chronic heart disease remains very limited. In fact, this group of patients requires strict nutritional management to prevent disease recurrence while improving their quality of life. Without a comprehensive understanding of how fast food consumption and lifestyle patterns affect the nutritional status of cardiac patients, nutritional interventions risk being general, non-specific, and less effective in supporting recovery. Therefore, research on the relationship between fast food consumption, lifestyle, and the nutritional status of cardiac patients at RGI Kudungga Sangatta is highly important. The findings of this study are expected to serve as a basis for planning more targeted nutritional interventions to support recovery and prevent recurrence among cardiac patients.

METHODS

This cross-sectional analytical study will be conducted in June 2025 at the Cardiology Outpatient Clinic of RGI Kudungga Sangatta, involving adult cardiac patients without comorbidities. Samples will be selected using accidental sampling among eligible patients (≥18 years, confirmed diagnosis, complete medical records, and willing to participate), while critically ill patients, pregnant or breastfeeding women, and those undergoing dietary counseling will be excluded. Nutritional status (dependent variable) will be assessed using body mass index (BMI) and categorized as underweight, normal, overweight, or obese. Independent variables include fast food consumption (assessed by FFQ;

low vs. high) and lifestyle (physical activity, diet, and smoking; healthy vs. unhealthy). Data collection will include anthropometric measurements and self-administered questionnaires following informed consent. Data will be analyzed using univariate and bivariate analyses, with the Chi-square test applied to determine associations at a 95% confidence level ($p<0.05$).

RESULTS

Based on Table 1, the majority of respondents were male (72.7%), while females accounted for 27.3%. In terms of age, the largest proportions were found in the 26–40 years and >51 years groups (each 34.1%), whereas the smallest proportion was in the 18–25 years group (11.4%). Regarding educational level, most respondents had completed senior high school or equivalent (56.8%), while the smallest proportion had a diploma (2.3%). Based on occupation, the majority were private sector employees (45.5%), whereas the lowest proportions were entrepreneurs and drivers (each 4.5%). Overall, these characteristics indicate that heart disease is more prevalent among males of productive age, with a secondary education level and employment in the private sector.

Table 1. Respondent Characteristics

Characteristics	n	%	Total
Sex			
Male	32	72,7	100,0
Female	12	27,3	
Age			
18-25 Years	5	11,4	100,0
26-40 Years	15	34,1	
41-50 Years	9	20,5	
> 51 Years	15	34,1	
Education			
Primary School	4	9,1	100,0
Junior High School / Equivalent	5	11,4	
Senior High School / Equivalent	25	56,8	
Diploma	1	2,3	
Bachelor's Degree	9	20,5	
Occupation			
Civil Servant	6	13,6	100,0
Private Employee	20	45,5	
Entrepreneur	2	4,5	
Driver	2	4,5	
Unemployed	14	31,8	

Source : Processed Data, 2025

Based on Table 2, the majority of respondents had normal BMI (54.5%), while the smallest proportion was classified as overweight (18.2%). In terms of dietary patterns, most respondents rarely consumed fast food (68.2%), while the remaining 31.8% frequently consumed it. Regarding lifestyle, the vast majority of respondents were categorized as having an unhealthy lifestyle (86.3%), whereas only a small proportion had a healthy lifestyle (13.6%).

Table 2. Distribution of Respondents by Nutritional Status, Fast Food Consumption, and Lifestyle

Characteristics	n	%	Total
Body Mass Index (BMI)			
Normal	24	54,5	100,0
Overweight	8	18,2	
Obese	12	27,3	
Fast Food Consumption			
Rarely	30	68,2	100,0
Frequently	14	31,8	
Lifestyle			

Healthy	6	13,6	100,0
Unhealthy	38	86,3	

Source : Processed Data, 2025

Table 3 (bivariate analysis) shows that there is no significant association between fast food consumption and nutritional status (p = 0.517; OR = 1.524). Although the proportion of obesity is higher among respondents with frequent fast food consumption (36.4%) compared to those with rare consumption (27.3%), the difference is not statistically significant. In contrast, lifestyle shows a significant association with nutritional status (p = 0.018; OR = 2.294). Respondents with an unhealthy lifestyle have a 2.3 times higher risk of obesity compared to those with a healthy lifestyle, with all obese respondents categorized as having an unhealthy lifestyle.

Table 3. Association Between Fast Food Consumption and Lifestyle with Respondents' Nutritional Status

Variable	Nutritional Status				Total		*p*	*OR*
	Normal		Obese					
	n	%	n	%	n	%		
Fast Food Consumption								
Rarely	16	72,7	14	63,6	30	68,2	0,517	1,524
Frequently	6	27,3	8	36,4	14	31,8		
Total	22	100	22	100	44	100		
Lifestyle								
Healthy	5	22,7	0	0,0	5	11,4	0,018	2,294
Unhealthy	17	77,3	22	100	39	88,6		
Total	22	100	22	100	44	100		

Source : Processed Data, 2025

Uji Chi Square

DISCUSSION

Association Between Fast Food Consumption and Nutritional Status in Cardiac Patients

The analysis showed that fast food consumption was not significantly associated with nutritional status among patients with coronary heart disease (p = 0.517; OR = 1.524). Although the proportion of obesity was higher among respondents who frequently consumed fast food (36.4%) compared to those who rarely consumed it (27.3%), this difference was not statistically significant. Thus, the null hypothesis (H_0) is accepted, indicating that fast food consumption is not a dominant factor influencing patients' nutritional status in this study.

These findings are consistent with Mason et al. (2018), who analyzed data from the UK Biobank and found that access to fast food restaurants was associated with obesity; however, this relationship weakened after adjusting for other lifestyle factors such as physical activity and overall dietary patterns. This suggests that fast food is not the sole determinant of obesity but rather part of a more complex set of risk factors (Mason et al., 2018). Additionally, the prospective ARIC (Atherosclerosis Risk in Communities) study reported that high consumption of ultra-processed foods was associated with a 19% increased risk of incident coronary artery disease (HR: 1.19) (Du et al., 2021). These findings highlight that while ultra-processed foods generally contribute to increased cardiovascular risk, their effects may differ among patients who have already been diagnosed with heart disease.

Clinically, many patients with coronary heart disease have already received nutritional education and reduced their fast food intake after diagnosis. This may explain why fast food consumption does not appear to have a dominant influence on their nutritional status in the present data. In addition, obesity and variations in nutritional status are more strongly influenced by holistic lifestyle factors, including physical inactivity, poor sleep patterns, stress, smoking, and metabolic conditions, which in this study seem to have a greater impact than fast food consumption alone. Although global evidence suggests that ultra-processed food increases the risk of obesity and cardiovascular disease, such as the meta-analysis in The Lancet Regional Health – Americas reporting a 17% higher cardiovascular risk at the highest level of consumption (Srour et al., 2019b), the findings of this study indicate that, in patients who have already received education and treatment, overall lifestyle factors play a more decisive role in determining nutritional status than the frequency of fast food consumption. These results are consistent with several previous studies indicating that the impact of fast food on nutritional status is strongly influenced by other factors, such as physical activity, metabolic

processes, and overall dietary habits. The theory of nutritional determinants also states that food consumption is only one of many factors affecting an individual's nutritional status, alongside physical activity patterns, genetics, and socioeconomic environment. Therefore, although fast food is often associated with obesity, this study did not find strong statistical evidence of a direct relationship in this population. However, some previous studies have reported an association between fast food consumption and the incidence of metabolic syndrome (Samodro et al., 2020).

This study shows that obesity in patients with coronary heart disease is more influenced by overall lifestyle factors (such as physical inactivity, smoking, stress, and poor sleep patterns) rather than fast food consumption alone. In other words, nutritional and health interventions for coronary heart disease patients should focus on comprehensive lifestyle modification, not merely limiting fast food intake.

Association Between Lifestyle and Nutritional Status in Cardiac Patients

The study findings indicate that an unhealthy lifestyle is significantly associated with obesity among cardiac patients ($p = 0.018$; OR = 2.294). It can be concluded that there is a significant relationship between lifestyle and nutritional status in cardiac patients. In other words, lifestyle plays an important role in influencing patients' nutritional status. Descriptively, all obese patients were classified in the unhealthy lifestyle group, whereas among those with normal nutritional status, a proportion still exhibited a healthy lifestyle (22.7%). Epidemiologically, this pattern is consistent with evidence that lifestyle components—particularly physical activity, overall dietary patterns, sleep, and smoking—interact to influence energy balance, appetite regulation (leptin/ghrelin), and body composition, thereby increasing the likelihood of obesity and, consequently, worsening cardiovascular risk. International scientific bodies recognize lifestyle modification as a key pillar in cardiovascular prevention and management. European Society of Cardiology (2021) emphasizes weight control, increased physical activity, smoking cessation, improved dietary patterns, and optimized sleep as core recommendations for cardiovascular disease (CVD) prevention in both patients and at-risk populations. Similarly, the American Heart Association and American College of Cardiology highlight lifestyle counseling as a central intervention for overweight and obese patients to reduce cardiovascular risk. This evidence reinforces the findings of the present study that overall lifestyle quality—rather than a single dietary component—is closely associated with the nutritional status of cardiac patients (Arnett et al., 2019).

Recent cohort studies and reviews indicate that a comprehensive healthy lifestyle score—combining physical activity, a healthy diet, non-smoking, moderate alcohol consumption, and adequate sleep—is associated with reduced CVD risk in individuals with obesity and improvements in metabolic profiles. Each additional healthy lifestyle component significantly lowers the likelihood of adverse outcomes. This highlights that a "bundle" of behaviors is more influential than any single factor. In the context of cardiac patients, the implication is clear: interventions should target multiple behaviors simultaneously rather than focusing solely on limiting one type of food (Fu & Shin, 2025). Furthermore, studies have shown that regular physical activity in individuals with obesity is associated with a 21% reduction in all-cause mortality and a 24% reduction in cardiovascular mortality. Among patients with coronary heart disease, exercise-based cardiac rehabilitation consistently reduces cardiovascular events and mortality while improving functional capacity. Even when weight loss is not substantial, improvements in lifestyle quality contribute to reduced risk. This is consistent with the present findings, where patients with unhealthy lifestyles were more likely to be obese (Martínez-Vizcaíno et al., 2024).

These findings indicate that patients with an unhealthy lifestyle are more likely to be obese compared to those with a healthy lifestyle. Descriptively, of the 44 respondents, 38 individuals (86.4%) had an unhealthy lifestyle, and among them, the majority (25 individuals or 65.8%) were classified as obese. In contrast, among the 6 respondents with a healthy lifestyle, almost all (83.3%) had normal nutritional status. This further supports the conclusion that an unhealthy lifestyle is a significant risk factor for imbalanced nutritional status among cardiac patients.

Therefore, it is essential for healthcare institutions such as RGI Kudungga Sangatta to continuously promote healthy lifestyle practices among cardiac patients, not only through medical treatment but also through behavioral-based educational and preventive interventions. Efforts to improve the nutritional status of cardiac patients should not rely solely on dietary regulation but must also involve comprehensive lifestyle modifications, including increased physical activity, stress management, and health behavior education. This approach is crucial to prevent further complications and to accelerate recovery among cardiac patients.

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CONFLICT OF INTEREST
The authors declare no conflict of interest.

CONCLUTION

Fast food consumption was not significantly associated with the nutritional status of patients with coronary heart disease, whereas lifestyle showed a significant relationship. Patients with an unhealthy lifestyle had a 2.3-fold higher risk of obesity compared to those with a healthy lifestyle, highlighting lifestyle as a key determinant of nutritional status and overall health. Strengthening lifestyle-based interventions—through nutritional counseling, promotion of regular physical activity, stress management, and family support—is essential. Community-based programs led by healthcare institutions and local authorities are also needed to ensure sustainable improvements beyond clinical settings.

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