

Original Research

KNOWLEDGE OF CORONARY ARTERY DISEASE AMONG CARDIOVASCULAR PATIENTS AT TRA VINH PROVINCIAL GENERAL HOSPITAL AND ASSOCIATED FACTORS IN 2024

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ABSTRACT: To assess patients' average level of knowledge regarding coronary artery disease and its associated factors at Tra Vinh Provincial General Hospital in the year 2024. A descriptive cross-sectional study was conducted on 128 patients diagnosed with coronary artery disease who came for examination and surgical treatment at the Cardiology Clinic at Tra Vinh Provincial General Hospital from May 2024 to July 2024 using the CADE-Q SV questionnaire. Our research results showed that 76.6% of patients had average knowledge and 23.7% of patients had poor knowledge; no patients had good knowledge; the rate of patients answering correctly for all questions was 45.04%; there was no correlation found between the knowledge of patients with coronary artery disease at Tra Vinh General Hospital and the factors surveyed at the time of the survey. Our research results showed that the knowledge of patients with coronary artery disease at Tra Vinh General Hospital in this study was still low, and there was no factors related to the rate of patients' knowledge about coronary artery disease have been found

Keywords: coronary artery disease, knowledge, Tra Vinh Provincial General Hospital

1. INTRODUCTION

Accurate knowledge of coronary artery disease (CAD) is critical for prevention, disease management, and improved patient outcomes. When patients understand their condition, they are more likely to adopt healthy behaviors, adhere to treatment regimens, and mitigate risk factors—ultimately reducing disease burden and the likelihood of complications. Nevertheless, multiple studies have highlighted the detrimental impact of misinformation, complacency, unhealthy dietary habits, and sedentary lifestyles on CAD progression.

To date, there has been no published investigation into CAD knowledge levels among patients at Tra Vinh Provincial General Hospital. In response to this gap, the present study titled “Knowledge of Coronary Artery Disease among Cardiovascular Patients at Tra Vinh Provincial General Hospital and Associated Factors in 2024” was conducted to assess patients’ understanding of CAD and examine relevant correlating factors.

2. RESEARCH METHODS

Study Population

The study included patients diagnosed with coronary artery disease (CAD), covering all clinical forms, who attended the outpatient cardiology clinic at Tra Vinh Provincial General Hospital between May and July 2024.

Inclusion Criteria

Patients who presented for initial or follow-up cardiovascular examination and met the diagnostic criteria for CAD based on the Vietnamese Ministry of Health’s “Guidelines for the Diagnosis and Treatment of Coronary Artery Disease” (1).

Exclusion Criteria

Patients unable to participate due to acute illness requiring inpatient or emergency treatment, or those with severe communication impairments such as hearing or speech disabilities.

Study Location

Cardiology Outpatient Clinic, Tra Vinh Provincial General Hospital, Vietnam.

Study Design

A descriptive cross-sectional design was applied.

Sample Size and Sampling Method

Sample Size Calculation

Based on the formula: $n =$

Where:

$= 1.96$ for 95% confidence level

σ the standard deviation

μ the population mean(2)

ε the acceptable relative error

Using this formula, the minimum sample size was calculated as 116. To account for potential dropouts, 10% was added, bringing the total to 128 patients.

Sampling Method

Convenience sampling was employed. Eligible patients with a confirmed CAD diagnosis attending the cardiology clinic during the study period were invited to participate.

Data Collection Instruments

Section 1: Sociodemographic questionnaire.

Section 2: Coronary Artery Disease Education Questionnaire – Short Version (CADE-Q SV), developed by Ghisi et al. (3), measuring knowledge across five domains:

Disease

Risk factors

Exercise

Nutrition

Psychosocial well-being

Each domain contains four items (total of 20), with response options: True, False, or “I don’t know”

Scoring:

Correct answer: 1 point

Incorrect or “I don’t know”: 0 points

Total score range: 0–20.
Knowledge classification:

Good: 15–20 points

Moderate: 8–14 points

Poor: ≤ 7 points, based on Elsheikh et al., 2024 [7]

The questionnaire was culturally

adapted and validated for Vietnamese populations by Nguyễn Thắng et al. (2020) (4)

Section 3: Clinical variables including hospital readmissions, BMI, and presence of complications.

Data Analysis

Data were analyzed using SPSS version 22.0.

Descriptive statistics: frequencies, percentages for categorical variables; mean, standard deviation, minimum and maximum for continuous variables.

Inferential statistics:

Independent samples t-test for comparing mean knowledge scores between two groups

One-way ANOVA for comparisons among three or more groups
Statistical significance threshold was set at $p < 0.05$.

Ethical Considerations

This study received approval from the Biomedical Research Ethics Committee at Tra Vinh University (Decision No. 4022/DHTV, issued May 6, 2024).

3. RESULTS AND DISCUSSIONS

3.1. Results

3.1.1. Clinical Characteristics of Participants

A total of 128 patients diagnosed with coronary artery disease (CAD) were included in this study. All patients (100%) presented with at least one comorbidity, most commonly hypertension (90.6%) and dyslipidemia (65.6%). Other notable conditions included diabetes mellitus (25.0%), gastroesophageal reflux (24.2%), and miscellaneous diseases (44.5%).

Table 1. Clinical Characteristics of Participants (n = 128)

Category	Frequency (n)	Percent-age (%)
Comorbidities		
Present	128	100.0
Absent	0	0.0

Category	Frequency (n)	Percent-age (%)
Specific Conditions		
Hypertension	116	90.6
Diabetes	32	25.0
Dyslipidemia	84	65.6
GERD	31	24.2
Other	57	44.5
Disease Duration		
< 1 year	19	14.8
1–5 years	62	48.5
> 5 years	47	36.7
Hospital Readmission		
None	56	43.8
1–3 times	68	53.1
> 3 times	4	3.1
CAD Type		
Acute CAD	3	2.3
Chronic CAD	125	97.7
BMI		
Underweight (	14	10.9
Normal (18.5–24.9 kg/m ²)	84	65.5
Overweight/Obese (≥25 kg/m ²)	30	23.6
Complication Awareness		
Yes	29	22.7
No	47	36.7
Unsure	52	40.6

These data suggest that most participants had chronic CAD with prolonged disease duration, presented with multiple comorbidities, and a majority had normal BMI. Notably, 77.3% of patients were either unaware or unsure of the potential complications associated with CAD.

3.1.2. Knowledge Assessment

The overall mean knowledge score among patients was 9.00 ± 1.89 out of a maximum of 20. The score distribution by domain was:

Domain	Mean $\pm$ SD	Min	Max
Disease Understanding	0.86 ± 0.80	0	3
Risk Factors	2.15 ± 0.66	0	3
Exercise Knowledge	2.86 ± 0.89	0	4
Nutrition Knowledge	1.02 ± 0.92	0	4
Psychosocial Risk	2.10 ± 0.85	0	4
Total Knowledge	9.00 ± 1.89	4	14

Knowledge levels were categorized as follows:

Table 3. Overall Knowledge Level Distribution

Knowledge Level	Range (Score)	Percentage (%)
Good	15–20	0.0
Moderate	8–14	76.6
Poor	≤ 7	23.4

Exercise knowledge yielded the highest mean score (2.86), while disease-specific knowledge was lowest (0.86), indicating significant gaps in patient understanding of CAD pathology.

3.1.3. Item-Level Accuracy by Domain

Table 4. Correct Responses by Knowledge Domain (n = 128)

Item Description	Correct Responses (n)	Accuracy (%)
Disease Understanding		
Heart disease affects only elderly with smoking/high cholesterol (False belief)	42	32.8%
Definition of angina (chest pain or discomfort in chest, arm, back, or neck)	34	26.6%
Aspirin prevents blood clot formation	26	20.3%
Statins reduce cholesterol absorption from diet	9	7.0%

Item Description	Correct Responses (n)	Accuracy (%)
Risk Factors		
Healthy lifestyle reduces progression of heart disease	120	93.8%
Lowering salt and regular exercise helps control blood pressure	104	81.3%
Moderate exercise allows comfortable conversation	22	17.2%
Stress, hypertension, and diabetes equally increase heart attack risk	29	22.7%
Exercise Knowledge		
Resistance training improves muscle strength and reduces blood sugar	86	67.2%
Warm-up reduces risk of angina during exercise	87	68.0%
Managing chest discomfort during walking by modifying pace	104	81.3%
Lifestyle can prevent worsening of diabetes	90	70.3%
Nutrition Knowledge		
Meat and dairy as source of fiber (Incorrect belief)	44	34.4%
Processed foods (e.g., canned meat/fish, sausages) contain excess salt	34	26.6%
Sleep apnea increases heart attack risk in previously affected patients	30	23.4%
Trans fats found in baked/fried foods are unhealthy	23	18.0%
Psychosocial Risks		
Only way to reduce stress is avoiding unpleasant people (False belief)	16	12.5%
Depression post-heart attack raises recurrence risk	75	58.6%

Item Description	Correct Responses (n)	Accuracy (%)
Vegetarian diet and avoiding eggs helps control cholesterol	78	60.9%
Eating fruits, vegetables, whole grains helps lower blood pressure	100	78.1%
Overall Correct Rate	–	45.1%

These findings confirm the absence of significant correlations between patient knowledge and clinical or demographic variables.

3.2. Discussion

3.2.1. Clinical Characteristics of the Study Population

The prevalence of chronic coronary artery disease (CAD) among participants was remarkably high (97.7%), compared to acute CAD (2.3%), differing from the findings of Nguyễn Thị Thu Hà et al. (5), who reported only 20% chronic cases. This variation may stem from differences in study design and sampling methods. In Tra Vinh, the predominance of chronic cases suggests a patient population requiring long-term outpatient management.

In terms of BMI, 65.5% of patients fell within the normal range, 10.9% were underweight, and 23.6% were overweight or obese—figures lower than those reported by Hertz et al. (2019), where 46.4% of patients were overweight or obese(6). Lifestyle patterns and the physical nature of occupations in the region may contribute to these differences.

Compliance with follow-up schedules was high (96.1%), exceeding the rate reported by Lưu Ngọc Minh et al. (2019) (88.57%), indicating positive health-seeking behaviors and awareness of routine care(7).

All patients had comorbidities, most commonly hypertension (90.6%), dyslipidemia (65.6%), and diabetes (25.0%)—higher rates than those found in Hà et al(5). These findings suggest an elevated risk burden among elderly CAD patients in Tra Vinh, likely shaped by dietary patterns and sedentary lifestyle factors.

Disease duration was mainly between 1 to 5 years (48.5%), followed by more than 5 years (36.7%) and less than 1 year (14.8%), differing from Michalski et al. (2022), who found over 41.0% of patients had CAD for more than five years(8).

Notably, 77.6% of patients lacked awareness of cardiovascular complications, contrasting sharply with the 73.2% knowledge rate reported by Phan Thị May et al. (2023). This discrepancy may stem from insufficient patient counseling or the inability to recognize early warning signs[16]. Enhancing awareness could empower patients to proactively manage risks. Furthermore, identifying complications through this study offers clinicians a clearer framework for early detection and patient education.

Regarding hospital readmissions, 56.2% of patients were admitted at least once, while 43.8% were not. Compared with Wang et al. (2017), whose study showed 75.2% of CAD patients had two or more readmissions, the lower rate in Tra Vinh may reflect better treatment adherence or effective community-based health infrastructure(9).

3.2.2. Patient Knowledge about CAD

Based on the classification by Elsheikh et al (10), patient knowledge levels were categorized as good (15–20 points), moderate (8–14 points), and poor (≤ 7 points). In this study, most patients exhibited moderate knowledge (76.6%), none reached the good category, and 23.4% had poor knowledge.

The mean knowledge score was 9.00 ± 1.89 , with scores ranging from 4 to 14 and an overall correct response rate of 45.04%. Compared with the study by Nguyễn Thị Thanh Tâm et al(11). (2018), where 25.38% of patients met the knowledge threshold, the lower scores in Tra Vinh highlight challenges in accessing health education resources and the need for more robust patient counseling programs.

3.3. Factors Associated with CAD Knowledge

Statistical analysis revealed no significant associations between knowledge scores and variables such as comorbidities, family history, smoking, alcohol consumption, complications,

hospital readmissions, or disease duration ($p > 0.05$). BMI also showed no meaningful effect on knowledge levels, differing from the study by Ammouri et al (12), where BMI influenced disease awareness ($p = 0.023$). This disparity may be attributed to the local population's characteristics, which include low exposure to medical information and high levels of manual labor.

4. CONCLUSION

This study revealed that CAD knowledge among patients at Tra Vinh Provincial General Hospital was predominantly moderate (76.6%) or poor (23.4%), with no cases demonstrating high-level understanding. The lowest scores were recorded in disease-specific knowledge (0.86 ± 0.80), while the highest were in exercise-related content. Overall, patients answered correctly 45.04% of the questions, with a mean total score of 9.00 ± 1.89 .

No demographic or clinical variables showed statistically significant correlations with patient knowledge ($p > 0.05$). These findings emphasize the urgent need for comprehensive education strategies tailored to local contexts.

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