

A Descriptive Study to Evaluate the Knowledge of Symptoms and Risk Factors of Cardiovascular Disease among General Public

Renuga* P, Karalmarx¹ A, Kesavankumar² S, Kesikamani³ M, Kiruthiga⁴ E, ,
Kannan⁵ S, Sangameswaran⁶ B Renuga* P

Assistant Professor, Department of Pharmacy Practice, SSM College of Pharmacy,

^{1,2,3,4}Final B.Pharm Practice School Scholars SSM College of Pharmacy,

⁵Professor & HOD Department of Pharmacy Practice, SSM College of Pharmacy,

⁶Principal, SSM College of Pharmacy, Affiliated to The Tamil Nadu Dr. M.G.R. Medical University,

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ABSTRACT

This descriptive survey was conducted among 180 rural participants in Jambai to assess their knowledge of heart attack (HA) symptoms and cardiovascular disease (CVD) risk factors. Of the participants, 79(43.88%) were female and 101 (56.11%) were male; 8(4.44%) were obese based on BMI, and 82(45.55%) had high blood pressure, though only 64 (35.55%) were on medication for it. High cholesterol (53, 29.44%) was the most reported family history, while sudden cardiac death (6, 3.33%) was the least. Diabetes was reported by 44 (24.44%) respondents, and 43 (23.88%) participants stated they never exercised. More than 60% of participants correctly identified common heart attack symptoms, with high blood pressure and high cholesterol recognized as risk factors by about 60%, while only 47% linked diabetes to heart attack risk. Awareness about differential symptoms in women was low (42.77%). Despite the availability of community resources such as campaigns, workshops, and educational materials, the findings highlight the need to improve knowledge of a typical symptoms and lesser-known risk factors to reduce heart-related morbidity and mortality.

KEYWORDS: Heart Attack, Cardiovascular Disease, High Blood Pressure, Heart Disease, Congenital Heart Disease.

I. INTRODUCTION

Cardiovascular diseases (CVDs) are a group of disorders affecting the heart, blood vessels, or both, collectively known as the cardiovascular or circulatory system, which transports blood throughout the body. CVD can involve the heart, brain, lungs, and limbs, with “cardio” referring to the heart and “vascular” to the blood vessels. Major types include coronary heart disease, cerebrovascular disease, peripheral arterial

disease, rheumatic heart disease, congenital heart disease, and deep vein thrombosis with pulmonary embolism. These conditions often result from blockages caused by fatty deposits in blood vessels, leading to acute events such as heart attacks and strokes ^[1]. Symptoms may include chest pain or heaviness, shortness of breath, dizziness, fatigue, leg pain, non-healing sores, swelling, numbness, paralysis, or difficulty speaking and walking ^[2].

The risk factors for CVDs are broadly classified into modifiable and non-modifiable types. Modifiable factors include smoking, obesity, diabetes, high blood pressure, high cholesterol, physical inactivity, unhealthy diet, excessive alcohol consumption, and chronic stress. Each of these can damage blood vessels, promote plaque build-up, or weaken the heart, increasing the risk of heart attack, stroke, and heart failure. High blood pressure, in particular, strains artery walls and accelerates atherosclerosis, while obesity and poor diet contribute to multiple related conditions. Physical inactivity reduces heart efficiency, and alcohol or stress can elevate blood pressure and promote vascular damage.

Non-modifiable risk factors include genetic predispositions, age, and gender. Inherited genetic mutations, such as those causing familial hypercholesterolemia, can significantly raise CVD risk. Advancing age naturally weakens heart function and increases susceptibility to conditions like atherosclerosis, heart attack, and stroke. Gender also plays a role, as men generally face higher CVD risks earlier in life, while women may experience different or atypical symptoms that can delay diagnosis and treatment. Recognizing both controllable and uncontrollable risk factors is essential for prevention, early detection, and effective management of cardiovascular diseases ^[3].

II. METHODOLOGY

Study design: An observational study

Study site: In and around jambai village, Bhavani, Erode District

Study duration: Study was carried out over a two-month periods. From May 2025 to June 2025.

Study criteria:

Inclusion criteria:

- Aged above 25years
- Both male and female
- Ability to read

Exclusion criteria:

- Not willing
- Vision impairment
- Not able to read and write
- Ageless than 25
- Being medical staff or healthcare professionals

Research approach–Descriptive

Research design–Sectional survey design

Study area–In and around Jambai, Bhavani, Erode District

Target population – Adults whose age is above 25 Years

Research variable – Knowledge

Study tool: Structured knowledge questionnaire & self-report.

Sample size –180

Methods of data collection:

- Ethical Considerations–To maintain participant's confidentiality.
- To explain about importance of this study and obtain informed consent from the willing participant.
- Participant selection: Selected randomly based on inclusion criteria.
- Data was collected by questionnaire method–Structured questions regarding knowledge about symptoms & risk factors for heart attack having YES or NO options.

Study procedures:

Selection of study related questionnaires:

Questions related to the knowledge assessment of heart disease symptoms & risk factors were

selected for this survey.

Selection of study population and sampling method:

Study populations were selected randomly according to inclusion criteria, in and around jambai village.

Data collection method:

The data was collected using the structured questionnaire after getting the informed consent from the participants.

Analysis and reporting of data:

Collected data were analysed using the descriptive analysis and the findings from the analysed data were reported.

III. RESULTS

Among the participants 79 (43.88%) of them were female, 101 (56.11%) of them were male. Around 8 (4.44%) participants were obese according to their calculated BMI. The high blood pressure affects 82(45.55%) of the participants. But only 64(35.55%) of the participants were taking medications for high blood pressure. Sudden cardiac death 6 (3.33%) is the least reported family history and high cholesterol53 (29.44%) were the highest reported. Regarding diabetes 44 (24.44%) respondents reported having the condition. Around 43 (23.88%) participants said they never exercised. The most common symptoms were correctly answered by more than 60 % of participants. High blood pressure and high cholesterol were recognizedas risk factor for heartattack by around 60% of participants, whereas link between diabetes and heart attack risk were believed only by 47 % of people. Awareness about differential symptoms of heart attack in women were low (42.77%) among the study participants.

Results of yes/no questions

104 members (57.77%) said no for asking about “is their family history of heart attack increases their risk of heart attack”. 95 members (52.77%) said no for asking about people with diabetes more likely to have a heart attack.

Table 1: Results of the survey (yes/no questions)

Question/Statement	No. of resident responding yes (%)	No. of resident responding no (%)
Keeping blood pressure under control can reduce A person's risk of heart disease?	104 (57.77%)	76 (42.22%)
If anyone in your family has heart disease, You are at risk for heart disease	76 (42.22%)	104 (57.77%)
Shortness of breath a symptom of cardia carrest	116(64.44%)	64 (35.55%)
High blood pressure a major risk factor for heart attack	113(62.77%)	67 (37.22%)
People with diabetes more likely to have a heart attack	85 (47.22%)	95 (52.77%)
Blood sugar is high for several months, it can Increase your cholesterol level and increase you risk of heart disease	117(65%)	63 (35%)

Family history:

The survey revealed that a significant portion of participants reported a family history of cardiovascular and related conditions. Stroke was reported, affecting 11 (6.11%) of participants' families. This was followed by heart attacks which

was reported by 21 (11.66%) and diabetes by 40 (22.22%). High cholesterol was reported by 53 (29.44%), while high blood pressure was noted in 49 (27.22%) of cases. Around 6(3.33%) participants reported a family history of sudden cardiac death. (Figure 1)

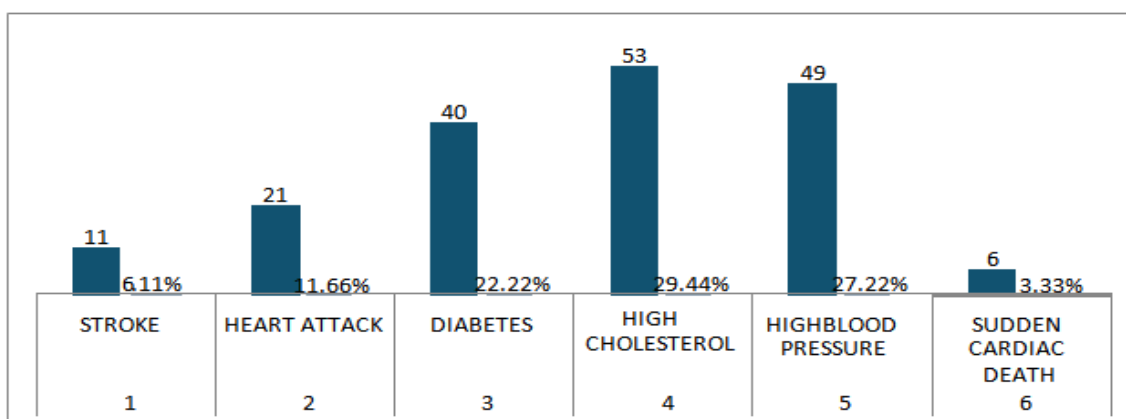


Figure 1: Family history

Symptoms

The survey responses indicate varying levels of awareness regarding the symptoms of cardiac arrest. Chest tightness and pain were identified as the most common symptom is correctly answered by 114 (63.33%) of

participants. Other responses included swelling in the legs 23 (12.77%) respondents, eye irritation 28 (15.55%) respondents, and ear ache 15 (8.33%) respondents, indicating lower levels of awareness regarding less typical or unrelated symptoms.

Table 2: What is the most common symptoms of cardiac arrest?

Knowledge	Frequency (N=180)	Percentage(%)
Ear ache	15	8.33%
Chest tightness and pain	114	63.33%
Swelling in the legs	23	12.77%
Eye irritation	28	15.55%

Among the participants around 114(63.33%) recognized that pain can also radiate to the arms, neck, and back during a cardiac event.

Table-3: A part from chest pain, where else can pain radiate during cardiac arrest?

Knowledge	Frequency (N=180)	Percentage (%)
Legs	17	9%
Arms, neck,back	114	63.33%
Stomach	30	16.66%
Fingernails	19	10.55%

Risk factors:

107 respondents (59.44%) recognized that high cholesterol increases the risk of heart attack by

causing fatty deposits to form in the blood vessels, which can restrict blood flow and lead to cardiovascular complications.

Table 4: High cholesterol affects the risk of heart attack

Knowledge	Frequency (N=180)	Percentage (%)
Doesnothing	13	6.11%
Causes fatty deposits to form in the blood pressure	107	59.44%
Lowers blood pressure	40	22.22%
Losesweight	20	12.22%

Regarding the statement “Obesity and lack of exercise increase the risk of heart attack,”102 (56.66%) respondents correctly answered “True,” recognizing these as key risk factors. However, 78

(43.33%) participants disagreed, suggesting a need for increased awareness about the impact of lifestyle on heart health.

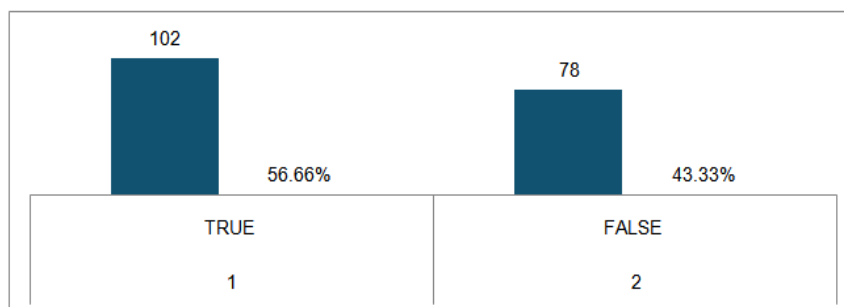


Figure 2: Obesity and lack of exercise increase the risk of heart attack

IV. DISCUSSION

The survey revealed concerning gaps in knowledge and practices related to high blood pressure and cardiovascular disease (CVD) risk factors among rural participants. Only 35.55% reported taking medication for high blood pressure and 33.88% monitored their BP regularly, despite 57.77% acknowledging that controlled BP reduces the risk of heart disease. Poor adherence to medication and irregular BP monitoring may contribute to higher morbidity rates. Family history awareness was also lacking— although high cholesterol was the most reported condition, only a few mentioned sudden cardiac deaths, and 74.44%

did not believe that a family history of heart disease increased their personal risk. This misconception may hinder preventive behaviours. Regarding lifestyle factors, 59.44% recognized smoking as a major risk, while smoking and alcohol use were reported by 17.77% and 27.77% respectively, suggesting lower prevalence of these habits compared to other risk factors. However, only 14.44% engaged in regular exercise, reflecting a sedentary lifestyle, while 46.66% and 28.88% reported moderate and severe stress levels, respectively, emphasizing the need for stress and lifestyle management education. **Ramdas Bhat, Preeti Shanbhag et al** reported that there is a need

for implementation of intervention regarding increasing awareness about active lifestyles^[5]. The survey also explored participants' understanding of diabetes as a risk factor for CVD. While 23.88% were diagnosed with diabetes, only 47.22% recognized its direct link to CVD, indicating a gap in awareness that requires targeted education. A study by **Abdullah Abdulmajid Abdo, et al** reported that diabetes (26%) was the risk factor that was least recognized by the participants^[6]. However, 65% correctly identified that uncontrolled diabetes over time can raise cholesterol levels, leading to heart disease. This knowledge could positively influence their attitudes toward regular diabetes monitoring and better management practices. Despite this, continued health education is crucial to strengthen the link in public understanding between chronic disease control and heart health improvement.

Awareness of heart attack symptoms was relatively higher, with over 60% accurately identifying common signs such as chest pain, pain radiating to the arms, neck, and back, shortness of breath, sweating, and fainting. This level of awareness may improve timely emergency responses and reduce complications. However, only 42.77% could differentiate symptoms between male and female patients, and just 53% knew to immediately call emergency services during cardiac arrest, showing clear areas for improvement. Addressing these knowledge gaps through continuous, targeted community education could significantly reduce the burden of CVD in rural populations

V. CONCLUSION

Even with the abundance of community resources, such as campaigns, workshops, and easily comprehensible educational materials, more information must be gained by rural public in order to lower heart-related morbidity and mortality. To successfully reduce the prevalence of cardiovascular diseases in the general population, strategic interventions that prioritize the effective implementation of preventive measures and knowledge of atypical symptoms and risk factors such as sedentary lifestyle, uncontrolled diabetes, and importance of medication adherence for chronic illnesses like diabetes and hypertension are needed.

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