

# A Study to Assess the Knowledge Regarding Warning Signs of Heart Attack Among College Students in Selected Colleges of Aizawl, Mizoram with A View to Develop an Awareness Program

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**Abstract**—Heart attack or Myocardial Infarction happens when blood flow to part of the heart muscle stops or reduces. It can be “silent” with no symptoms, or sudden and fatal. Most cases are caused by coronary artery disease, the top cause of death in the US. Without oxygen, heart cells die. Common signs are chest pain/pressure spreading to neck, jaw, shoulder, or arm. Diagnosis uses ECG and blood tests like troponin. MI is the most severe form of CAD and is divided into STEMI and NSTEMI. Unstable angina is also part of Acute Coronary Syndrome. A self-made knowledge questionnaire was used. 100 college students from selected Aizawl colleges were chosen by convenience sampling. Data on demographics + knowledge was collected. Out of 100 students: 34% were 20-21 years old, 67% were female, 53% were in 4th semester. 91% had no family history of heart disease. 56% had no tobacco history, but 59% of tobacco users smoked cigarettes. 98% had no personal heart disease history. 50% got info from health professionals. Chi-square test showed significant association between knowledge score and age, gender, semester, family history, tobacco use, medical history, info source, and previous info at  $p < 0.05$ . So, the hypothesis was accepted. The self-structured questionnaire was effective in assessing students’ knowledge on heart attack warning signs.

**Index Terms**—Knowledge, Assessment, Heart attack, Warning signs, Questionnaire.

## I. INTRODUCTION

The heart is a ~300g muscular pump in the chest that sends oxygen and nutrient-rich blood to the body.

Deoxygenated blood returns to the right side, goes to the lungs to pick up oxygen, then the left side pumps oxygenated blood through the aorta to the whole body. A heart attack or MI is an emergency where heart muscle dies due to blocked coronary blood flow, caused by factors like age, smoking, high BP, obesity, poor diet, and stress. Symptoms include chest pain spreading to arm/jaw/back, cold sweat, nausea, and shortness of breath. Treatment uses aspirin, clot busters, nitro-glycerine, beta blockers, and statins. If untreated it can lead to heart failure, arrhythmia, or cardiac arrest. Heart disease is the leading US cause of death, with 1 death every 34 seconds and 919,032 deaths in 2023.

## STATEMENT

A study to assess the knowledge regarding warning signs of heart attack among college students in selected colleges of Aizawl, Mizoram with a view to develop an awareness program.

## HYPOTHESIS

Hypothesis will be tested at 0.05 level of significance:  $H_1$ : There is a significant association between the level of knowledge regarding warning signs of heart attack with selected demographic variables.

## II. METHODOLOGY

This chapter explains the methods used for the study. A quantitative research approach was chosen because

the aim was to assess knowledge on heart attack warning signs among college students in Aizawl, Mizoram and plan an awareness program. A descriptive research design was used. The study was done in 2-3 selected colleges in Aizawl. Target population was 28,000, accessible population 466, and sample size was 100 college students selected by convenience sampling. Inclusion: willing students present during data collection. Exclusion: absent students or those in class. Variables included demographics like age, gender, semester, family history, tobacco use, medical history, info source, and the main research variable: knowledge on warning signs. A self-administered structured questionnaire with 20 MCQs was developed. Content validity was checked by 5 nursing experts. Reliability was tested on 10 students using Split Half method,  $r = 0.94$ . The tool had 2 parts: Section I for demographics, Section II for knowledge. Scoring: 1 mark per correct answer, total 20. Knowledge levels: Inadequate 0-9, Moderate 10-15, Adequate 16-20. A pilot study was done on 17/4/2026 at Govt. Johnson College with 10 students. Data collection was done from 23/4/2026 to 28/4/2026 in 2 colleges after getting permission and informed consent. Students got 30 minutes to answer. Ethical clearance and permissions were obtained from the institution and college heads. Data will be analyzed using descriptive stats like frequency, percentage for demographics and knowledge levels, and inferential stats like chi-square test to check association between knowledge and demographics. In short: Descriptive survey design, 100 students, convenience sampling, validated questionnaire, ethical approval taken, data analyzed by frequency, percentage and chi-square test.

### III. RESULT

Table 1. Frequency and percentage distribution of demographic variables

(n = 100)

Demographic Variables	Frequency	Percentage
Age		
18-19	13	13%
20-21	34	34%
21-22	29	29%
23 above	24	24%
Gender		
Male	33	33%

Female	67	67%
Semester		
2nd Semester	42	42%
4th Semester	53	53%
6th Semester	5	5%
Family History of Heart Disease		
Yes	9	9%
No	91	91%
If yes, specify		
Heart Attack	44	44%
Heart Failure	2	22%
Others	3	33%
History Of Tobacco		
Yes	44	44%
No	56	56%
If yes, specify		
Cigarettes	26	59%
Shikhar	7	16%
Betel Nuts	10	23%
Others	1	2%
Medical History		
Yes	2	2%
No	98	98%
Source of Information		
Health Cate Professional	50	50%
Family	18	18%
Friends	3	3%
Mass Media	29	29%

Data presented in table no.1 shows frequency and percentage distribution of demographic variables. The above table no.1 depicts the percentage distribution of respondents by age, gender, semester, family history, history of tobacco, medical history and source of information .Among hundred respondents, majority (34%) of participants belong to the age group of 20-21 years, majority (67%) of participants belong to female, majority (53%) of participants belong to 4<sup>th</sup> semester, majority (91%) do not have family history of heart disease, majority (44%) of participants belong to Heart Attack, majority (56%) of participants do not have History of Tobacco, majority (59%) of participants belong to Cigarettes ,majority (98%) of participants have no medical history of heart disease and majority (50%) of participants belong to Health care professional.

Table 2: Frequency and percentage distribution of the level of knowledge regarding warning signs of heart attack.

(n = 100)

Level of Knowledge	Score Range	Level of Knowledge	
		Frequency	Percentage
Inadequate Knowledge	0-9	1	1%
Moderate Knowledge	10-15	56	56%
Adequate Knowledge	16-20	43	43%

Data on table no.2 shows that the majority i.e., 56% of participants had moderate knowledge, 43% had inadequate knowledge and 1% had adequate knowledge regarding warning signs of heart attack.

Table 3: Association between the level of knowledge with selected demographic variables among college students

(n = 100)

Demographic variables	Knowledge score			Chi-square ( $\chi^2$ )	df	p-value	Inference
	Inadequate	Moderate	Adequate				
Age (in years)							
18-19	-	8	5	3.378	6	0.76	NS
20-21	-	19	15				
21-22	-	16	13				
23 above	-	13	10				
Gender							
Male	1	16	16	3.001	4	0.22	NS
Female	-	40	27				
Semester							
2nd Semester	-	24	17	1.90	4	0.75	NS
4th Semester	1	27	24				
6th Semester	-	5	2				
Family History of Heart Disease							
Yes	1	4	2	13.95	2	0.0011	S
No	-	52	41				
History of Tobacco							

Yes	1	26	16	2.18	2	0.33	NS
No	-	30	27				
Medical History of Heart Disease							
Yes	-	-p	1	1.285	1	0.52	NS
No	-	56	43				
Source of Information							
HealthCare Professionals	-	32	18	7.59	6	0.26	NS
Family History	1	9	8				
Friends	-	2	1				
Mass media	-	13	16				

S=Significant

NS = Non – Significant

Analysis from the above Table 1 shows that there was association between knowledge regarding warning signs of Heart Attack and family history of heart disease.

#### IV. CONCLUSION

From the findings of the present study, it can be concluded that the population has moderate knowledge regarding warning signs of heart attack.

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