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Original Article

# Assessment of Heart Attack Management and Awareness Among Non-Medical Subjects

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## ABSTRACT

***Objective:*** The objective of this study was to assess the awareness level of heart attack and its management among non-medical students.

***Study Design:*** It was a cross sectional study

***Place and Duration of Study:*** Study was taking place from Mar to Apr 2022. 301 non-medical consenting students (aged 16-25 years) responded to our online questionnaire.

***Methodology:*** It was a cross sectional study and took place from Mar to Apr 2022. 301 non-medical consenting students (aged 16-25 years) responded to our online questionnaire, and their responses were compared to standard answers to estimate awareness. This data was analysed using SPSS version 25.[1]

***Results:*** 49(16.3%) students were male and 252(83.7%) were females. 265(88%) of the participants were aware of the term heart attack. 211(70%) showed good knowledge of risk factors for heart attack.

***Conclusion:*** Overall, the subjects showed a good knowledge of heart attack symptoms and risk factors. There was however little awareness about emergency management in case of heart attack.

**Keywords**: Heart Attack, Risk Factor, Awareness, Management, Myocardial Infarction.

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## INTRODUCTION

A myocardial infarction (MI), commonly known as a Heart attack,[1] occurs when blood flow decreases or stops to the coronary artery of the heart, causing damage to the heart muscle.[2] Most MIs occur due to coronary artery disease.[3] Risk factors include high blood pressure,[4] smoking,[5] diabetes,[6] lack of exercise,[7] obesity,[8] high blood cholesterol,[9] poor diet,[10] and excessive alcohol intake.[11] Worldwide, about 15.9 million MIs occurred in 2015.[12] The World Health Organization estimated in 2002, that 12.2 % of worldwide deaths were from ischemic heart disease,[13] with it being the leading cause of death in high or middle income countries and second only to lower respiratory infections in lower income countries.[14]

As said, prevention is better than cure. And the right way of prevention is based on awareness/ knowledge, attitude, and readiness to take the preventive measures. According to recent studies, internationally the awareness level of heart attack is 57 %.[15]

People associated with the medical sector can adopt healthy heart attack preventive measures to some extent as they ha- ve the right knowledge set. However, it is hypothesized that there is inadequate awareness of heart attack in non-medical population of Pakistan. This study aims to assess the aware- ness level of the risk factors, symptoms, and emergency management of heart attack among people who do not belong to the medical sector.

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## METHODOLOGY

The cross sectional study was conducted from March 2022 to April 2022. Data was collected after getting approval from the ethics committee of Army Medical College, Rawalpindi.

**Inclusion Criteria:** Non-medical students, age group: 16-25 years.

**Exclusion Criteria:** Non-consenting students were excluded.

Using Non Probability Convenient Sampling Technique, a total of 301 non-medical subjects were analyzed based on a self-administered questionnaire. The responses were collected through an online questionnaire on Google Forms.

Data was analysed on a statistical package for data analysis.[1] Mean±SD was calculated for continuous variable, frequency and percentages were calculated for qualitative variables.

## RESULTS

The sample consisted of 301 students, Mean age of the stu- dents was 20.25±3.44 years ranging from 16 to 25 years. The age group most expressed in this

study was 16-18 years, i.e., 155 students (51.5%), followed by 19-21 years, i.e., 115 students (38.2%), followed by above 21, i.e. 31 students (10.3%). Out of these, 49 (16.3%) students were male and 252 (83.7%) were females.

- 211(70%) showed good knowledge of risk factors for heart attack shown in Figure-1.
- 265 (88 %) of the participants were aware of the term heart attack.
- 70-80 % chose correctly the symptoms chest pain, irre- gular pulse, pain in neck, jaw, and left shoulder shown in Figure-3, and thus, students showed a good understanding of signs and symptoms of heart attacks.
- An overwhelming majority 263 (87.4%) knew someone who had suffered from heart attack.
- Lifesaving procedures like CPR and giving medications were chosen by less than 30 percent shown in Figure-2, and thus, students had little knowledge of emergency management, and 70 percent relied only on calling emergency services.

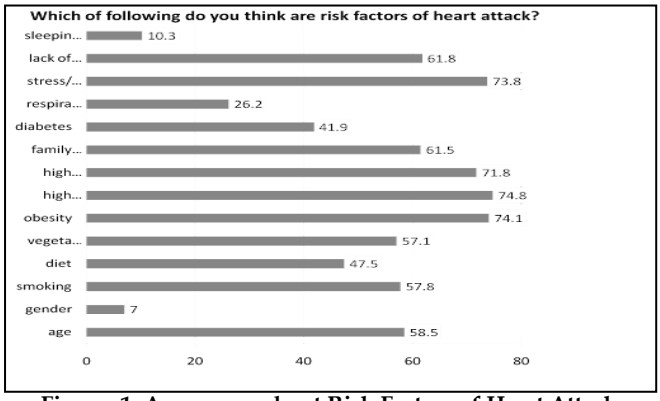


**Figure- 1: Awareness about Risk Factors of Heart Attack**

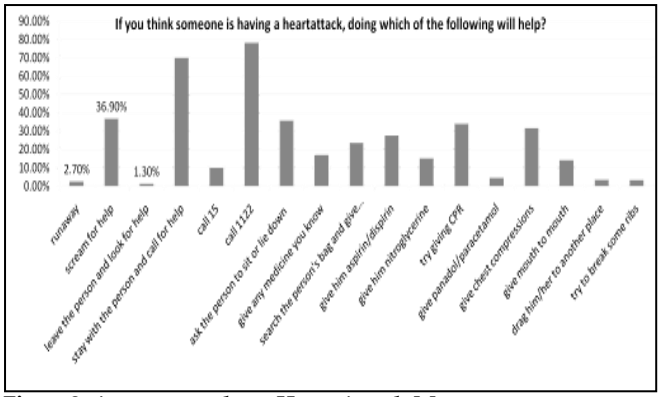


**Figure2: Awareness about Heart Attack Management**

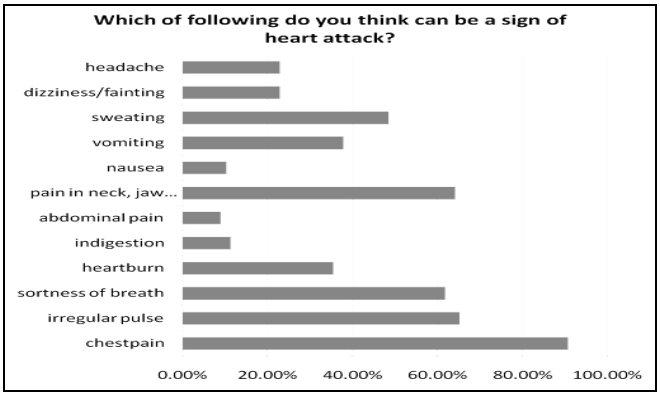


**Figure-3: Awareness about Heart Attack Symptoms**

## DISCUSSION

Myocardial Infarction is a medical emergency and a leading cause of death worldwide. Awareness among general population is necessary to overcome this challenge. As per seen in this study, non-medical students have a good understanding towards the risk factors and prevention. However emergency management of MI patients still seems a challenge for our non-medical youth.

### Awareness about Risk Factors

According to Table-3 of a study done in 2015 for awareness level among non-medical students,[16] 80 % of students had good knowledge of risk factors, while our study shows that 70% of students have good knowledge of risk factors.

In,[17] 43% (n=639) of the respondents thought that high blood pressure was the most significant risk factor for heart disease. 23% (n=337) of respondents believed that heredity was the most common cause of heart disease. Smoking was selected by only 15% (n=218) of the survey population. While in our study, 71.4% of the participant believed high blood pressure was a major risk factor in heart disease.

61.5% believed family history was a risk factor. A major chunk (57.8%) thought smoking as a cause of heart attack.

In,[18] 49.3% of the respondents marked unhealthy diet and cholesterol as a risk factor, while in our study 47.5% marked diet, and 74.8% marked high cholesterol as a risk factor.

According to two studies,[18,19] the most commonly addressed risk factor was smoking (69.9%,[8] 75%,[9] whereas according to our study, the most common recognized risk factor is high blood cholesterol (74.8%).

**Awareness about Signs and Symptoms**

According to a large study,[20] chest pain was marked as a symptom by 74.3% respondents, however, according to our study 90% respondents thought chest pain is a major symptom of heart attack. This variation in percentage might be because we had a small target population.

In,[21] 37.3% respondents knew about pain in the neck, back, or jaw as a sign of heart attack, while in our study, 67% respondents knew about this sign. This variation in percentage might be because we targeted the age group 16-25 while the study in,[11] targeted the age group 18-80, and this also shows how the high school and college going population has more knowledge about signs and symptoms.

In,[22] 64% respondents thought sweating is an indicative of heart disease and 35% believed dizziness to be a sign, while in our study, 49% respondents marked sweating as a sign & 22% marked dizziness sign.

**Awareness about Management**

In,[23] only 33.7% of participants felt able to perform CPR when witnessing a cardiac arrest, and according to our study, 34% of respondents thought they could perform CPR in case of an arrest.

According to a study conducted in US,[24] 85.8% of respondents had the knowledge to call 911 as the first action when witnessing a heart attack, and according to our study 80% of the participants reported knowledge of calling 1122 or health care helpline as a first response.

## LIMITATIONS OF STUDY

Some limitations of our study are as follows:

- **Lack of resources:** with more resources we could reach out to more subjects of this age group.
- **Limit of time:** due to restricted time, scope of the study is limited.
- **Inclusion of age groups:** we performed the study for a targeted age group and thus age group analysis is absent.

## CONCLUSIONS

Subjects overall showed a good knowledge of MI and its associated causes and risk factors involved. There was however little understanding regarding the protocol for emergency management of patients of MI. A good understanding of signs and symptoms involved for Heart Attack was also exhibited by the subjects.

**Conflict of Intrest:** None

**Author's Contribution**

Following authors have made substantial contributions to the manuscript as under:

AG: Developing Questionnaire, Data Collection, data Compilation, data analysis, article writing & final apporval of the version to be published.

FI: Co-supervision, Developing Questionnaire, Data collection, Data compilation, & final apporval of the version to be published.

SHA: Developing Questionnaire, Data Collection & final apporval of the version to be published.

MT: Developing Questionnaire, Data Collection & final apporval of the version to be published.

UT: Developing Questionnaire & final apporval of the version to be published.

MD: Data collection & final apporval of the version to be published.

KQ: Supervison, revising & final apporval of the version to be published.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investi-gated and resolved.

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