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Research Article

**KNOWLEDGE & PRACTICE REGARDING MODIFIABLE  
RISK FACTORS OF CARDIAC ILLNESSES AMONG PATIENTS  
WITH ACUTE MYOCARDIAL INFARCTION**

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**Abstract:**

**Background:** Cardiovascular diseases are major cause of mortality and morbidity all over the world. Knowledge regarding any disease and its risk factors are vital pre-requisite for implementation of prevention and control of that disease. Our study emphasized to assess the knowledge of risk factors that can be modified regarding cardiovascular diseases in patients with acute myocardial infarction (MI) admitted in Nishtar Hospital Multan

**Methods:** It is a hospital based cross sectional descriptive study that has been carried out in cardiology & medicine departments of various hospitals of Punjab, Pakistan on 110 patients admitted due to first attack of acute myocardial infarction. We assessed the knowledge of four modifiable risk factors i.e., fatty food consumption, smoking, less physical activities and obesity.

**Results:** Among 110 patients, 83 (75.4%) were males while 27 (24.5%) were females. 48 (43.6%) of the subjects were having ample knowledge of modifiable risk factors. Educational status was associated with better level of knowledge.

**Conclusion:** There is a lack of ample amount of knowledge among patients admitted with first attack of acute MI. Implementing educational strategies is of ultimate importance in population of Pakistan for prevention of the ascending prevalence of this disease to encounter the burden of acute MI.

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**INTRODUCTION:**

Accelerated urbanization and adoption of sedentary life style introduced a rising burden of cardiovascular diseases in the developing countries.<sup>1-3</sup> Cardiovascular diseases are root for one in four deaths all over the world.<sup>4</sup> Tobacco smoking, unhealthy fat rich diet, lack of exercise and over consumption of alcohol, favor to 80% of cardiovascular diseases.<sup>5</sup> Lack of latest facilities in the healthcare setups keep developing countries unequipped to confront with this burden, and coupling it with lack of knowledge and awareness of the disease and its symptoms bring about worse outcome of the morbidity.<sup>6</sup> The enhancing rates of admissions in hospitals and mortality from cardiovascular diseases at an early age is a clear cut example of it.<sup>7</sup>

The most compelling way to confront the endemic of cardiovascular related illnesses in low income populations is its prevention. Awareness of modifiable risk factors of cardiovascular illnesses has been identified as a vital pre requisite for behavioral alteration and is often intended by the prevention programmes.<sup>8,9</sup> Although awareness alone is not plentiful yet it can be assumed to be a vital component of behavior change for decision making.<sup>10</sup> assessment of the level of knowledge of the general population and those who are suffering from cardiovascular diseases may help in management of public health programs especially those which are aimed for reducing risk factors for cardiovascular diseases. Earlier studies have demonstrated that educational seminars for the old age people were compelling in improvising health promotion knowledge and behaviours.<sup>11,12</sup>

Awareness of risk factors of cardiovascular diseases varies among various populaces. Whites have higher level of education regarding these diseases than Afro Americans in the United States of America.<sup>10</sup> Similarly in UK, there was practice of lack of exercise in South Asian families and had a lower degree of knowledge of cholesterol and dietary content in comparison to the native white population.<sup>13,14</sup> Another study regarding the risk factors for heart diseases has shown that use of tobacco, low density lipoproteins intake, increased fasting blood glucose levels, increased cholesterol levels, family history of cardiovascular illnesses, poverty, and low levels of education are associated with premature myocardial infarction in Pakistan.<sup>15</sup> A study conducted in Karachi, Pakistan revealed lack of knowledge among general population of Karachi.<sup>16</sup> Moreover, another study that was

conducted in the same city showed lack of ample knowledge in patients with Myocardial infarction.<sup>17</sup>

This study aimed to evaluate knowledge of modifiable risk factors of cardiovascular diseases and determination of risk factors associated with good level of knowledge in patients with acute MI admitted to various hospitals of Punjab, Pakistan.

**MATERIAL AND METHODS:**

It is a hospital based cross sectional descriptive study that is carried out at medicine & cardiology department at Nishtar Hospital Multan & Lahore General Hospital Lahore, which spanned from November 2018 to May 2019, a period of 6 months. All the patients admitted to the cardiology department of Nishtar Hospital Multan and medicine department of Lahore General Hospital Lahore with first acute MI who fulfilled the criteria for Myocardial Infarction were eligible to be included in the study. Acute MI was defined according to the American College of Cardiology (ACC) and European Society of Cardiology's criteria.<sup>18,19</sup> The presence of at least two out of three of the following factors were considered diagnostic for acute Myocardial Infarction.

1. Typical chest pain lasting for 20 min or more
2. ECG demonstrating ST elevation of at least 02 mm in 02 or more adjoining leads with subsequent evolution of the ECG.
3. Cardiac markers (CK-MB or troponin T or I) are elevated. Patients fulfilling the study criteria were asked to participate in this study after explaining them about the study. Those who gave consent were eligible for this study. Moreover, confidentiality of the information was assured to all of them. All those patients who were having a previous history of MI were excluded from the study. Data was collected using a designed questionnaire. Components of the questionnaire were based on previously published studies.<sup>8,9,17</sup> Questions regarding knowledge of four important modifiable risk factors fatty food consumption, cigarette smoking, lack of physical exercise and obesity were included. Those who could identify three out of four risk factors were considered to have good level of knowledge. Data was analyzed for frequencies and percentages using SPSS-23. Associations of educational status and gender with knowledge were assessed using chi-square test.

**RESULTS:**

A total of one hundred and ten eligible patients participated in this study. Among 110 patients 83 (75.4%) were males, while 27 (24.5%) were females. The Mean age of the patient and monthly family

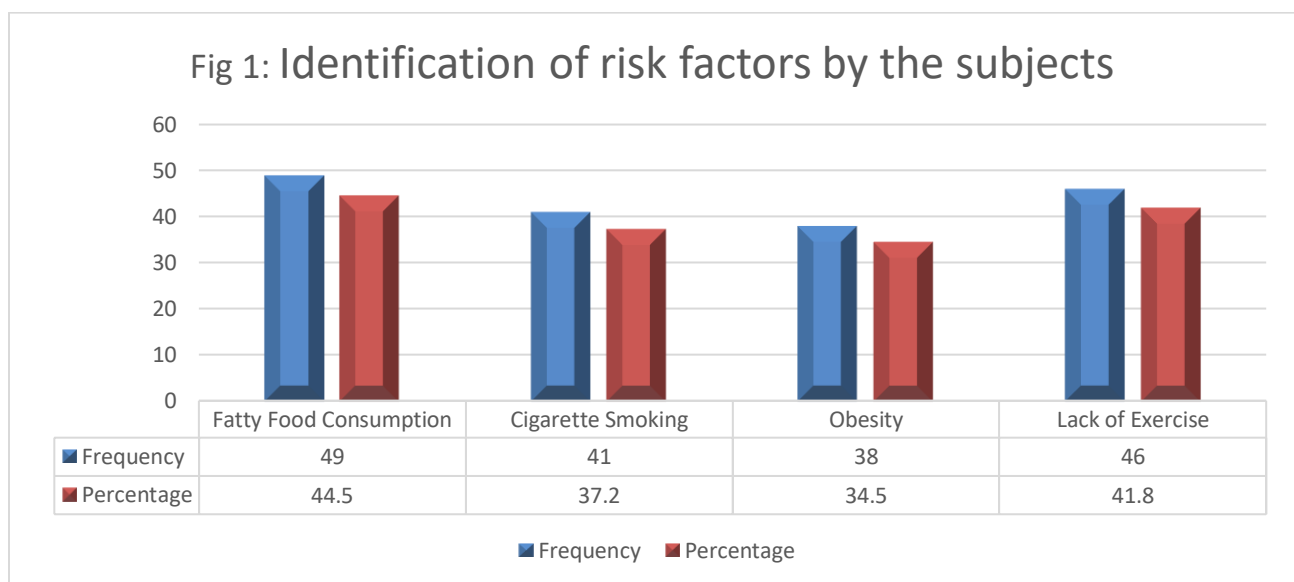
income of the patients were  $54.3 \pm 16.7$  and  $13655.3 \pm 15244.3$  respectively. Only 38 (34.5%) subjects had complete 10 years of education. Those who smoke tobacco were 41 (37.2%). Only 18 (16.3%) of the patients did exercise daily

Clinical analysis of the patients revealed that 38(34.5%) of the subjects were having diabetes mellitus, while 46(41.8%) were hypertensive. Table-I showing the knowledge of modifiable risk factors of cardiovascular diseases. Subjects who had no knowledge of any of the risk factors for heart diseases were 38(34.5%). Patients who knew about only one risk factor were 23 (20.9%), while 16

(14.5%) of the patient were having ample knowledge regarding two risk factors. Knowledge regarding three out of four risk factors was considered as good level and 18 (16.36%) were having that knowledge. 15(13.6%) patients had a knowledge regarding all 4 modifiable risk factors. Identification regarding risk factors by the patients are shown in a Bar Chart (Figure- 1). Male subjects were having better knowledge as compared to females except for knowledge regarding obesity. Moreover, it was analyzed that there is a significant association between educational status of the patients and ample knowledge level.

**Table-I Showing the knowledge of modifiable risk factors of cardiovascular diseases**

Knowledge of Modifiable risk factors	Frequency	Percentage %
Don't know any risk factor	38	34.5
Only one risk factor	23	20.9
Two risk factors	16	14.5
Three risk factors/Good level of knowledge	18	16.36
All four risk factors	15	13.6



**DISCUSSION:**

This is the study about the knowledge of modifiable risk factors of cardiovascular diseases among high risk groups in Pakistan. Awareness of modifiable risk factors for heart diseases; fatty diet consumption, cigarette smoking, morbid obesity and lack of physical activities were assessed in these patients. 17 According to this study 34.5% patients were diabetics and 41.8% of the subjects were having hypertensive. This finding is also consistent with another study that was conducted in Karachi.<sup>17</sup> Moreover our study

showed that only 11% of the subjects exercised daily which is more than that conducted in Karachi and some other south Asian countries, which showed 4.3% of the subjects exercised daily.<sup>17,20</sup>

According to our this study only 29.9% of the subjects were having good level of knowledge, which is significantly less than that conducted at National Institute of Cardiovascular Diseases which showed that approximately 42% of the subjects were having ample knowledge.<sup>17</sup> Those who were not aware of

any risk factors were 34.5%, which is quite worrisome result as compared to the study conducted at NICVD Karachi which showed only 3.8% of the subjects without knowledge of any of the risk factor for cardiovascular diseases. Besides this, educational status was having a really significant association with knowledge about the risk factors for heart diseases which is alike to other studies conducted in Karachi and Saudi Arabia. 17,21 Modifiable risk factors for example fatty food consumption, cigarette smoking, lack of physical exercise and obesity were recognized by nearly the same number of subjects with a slight difference to other studies conducted in Karachi, but the percentages are different. 16,17 As it was a cross sectional descriptive hospital based study, it may not be projected to the whole population of our country. However, this study might facilitate for further population based studies regarding modifiable risk factors for cardiovascular diseases.

### CONCLUSION:

Our study established the conclusion that there is a lack of fair amount of knowledge of modifiable risk factors for cardiovascular diseases among patients with Myocardial Infarction in tertiary care hospitals of Punjab. Moreover, educational status and male gender were closely associated with ample amount of knowledge.

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