

# Level of Knowledge About Coronary Artery Disease is Poor Among Bangladeshi Hospitalized Patient Following Acute Coronary Syndrome

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## Abstract:

**Back ground:** Coronary artery disease (CAD) is a major risk of death worldwide. Level of education about this important health problem is poor in our general population. Aims of this study was to find out simple knowledge about coronary disease, and to find the knowledge about risk factors, symptoms, complications and knowledge about prevention of coronary disease among the hospitalized patient who admitted to SSMS and Mitford Hospital and diagnosed as patients of Acute Coronary Syndrome (ACS).

**Method:** A pre tested questionnaire regarding assessment of level of knowledge about CAD was used to studied of the patients was admitted to SSMC and Mitford Hospital with the diagnosis of acute coronary syndrome during the period April 2009 to October 2009.

**Result:** Our study suggests that there is a lack of awareness among a sampled Bangladeshi population regarding CAD and its modifiable risk factors. We found that the low level of knowledge in the majority of patients, the rural and less educated patients had a lower level of knowledge.

**Conclusion:** Our cardiac patients have poor knowledge regarding their disease; improvement of knowledge is needed through much education to prevent CAD.

**Key words:** Coronary artery disease, Knowledge, Acute coronary syndrome.

## Introduction:

The heart is the human body's hardest working organ. Throughout life it continuously pumps blood enriched with oxygen and vital nutrients through a network of arteries to all parts of the body's tissues. Coronary heart disease (CHD) is a major health burden and cost to healthcare.<sup>1</sup> Acute coronary syndrome (ACS), encompassing a range of disorders from unstable angina through non ST elevation to ST elevation myocardial infarction, is a leading cause of death in the world in both developed and developing countries<sup>2</sup>. The South Asian countries like India, Pakistan, Bangladesh, Sri Lanka, and Nepal account for about a quarter of the world's population and contribute the highest proportion of the burden of cardiovascular diseases as

compared with any other region globally.<sup>2,3</sup> However, there is no published data for prevalence or incidence of CAD in Bangladesh. World Health Organization has predicted, by 2020 up to three quarters of death in the developing countries would result from non-communicable diseases and CAD will top of the list of the killers.

“Barriers to seeking appropriate care quickly are both cognitive and emotional.” If patients do not know the symptoms of acute myocardial infarction (heart attack) and other acute coronary syndromes—including nausea and pain in the jaw, chest or left arm—they will not seek treatment for them. If they do not perceive themselves to be at risk for heart attack, they will look for another explanation when they experience these symptoms.<sup>4</sup> Nearly half of patients with a history of heart disease have poor knowledge about the symptoms of a heart attack and do not perceive themselves to have an elevated cardiovascular risk. Individuals with heart disease have five to seven times the risk of having a heart attack or dying as the general population.

## Subjects & Methods:

The study was a cross sectional study conducted in Sir Salimullah Medical College & Mitford Hospital during the period from April 2009 to October 2009. Keeping compliance with Helsinki Declaration for Medical Research Involving

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Human Subjects 1964, all the subjects selected for study were informed orally and in writing about the study design, objectives and right for the participant to withdraw from the project at any time, for any reason, what so ever. The study population was the patients undergoing coronary heart disease admitted to SSMC and Mitford Hospital following acute coronary syndromes (Diagnosed by symptom, ECG criteria and enzyme level) irrespective of sex. A total of 95 subjects meeting the inclusion criteria (Patient admit to hospital for chest pain and diagnosed as ACS, Both sex, Age above 18 yrs) was selected consecutively.

A structured questionnaire was developed containing multiple questions, covering different area regarding knowledge about coronary artery disease and its risk factors, perception of CAD, different modalities of treatment, dietary factors and clinical situation when patient should seek medical attention. The socio-demographic variables included in the proposed study were age, sex, religion, residence, level of education and monthly income, assessment of clinical parameters, history about known risk factors, emergency service related variables, were set for knowledge assessment of the patients. A structured questionnaire was formed which included all the variables of interest. The questionnaire was finalized following pre-testing and taking necessary feedbacks from cardiologist and the guide. Form was pre-tested and necessary modifications were done.

The level of knowledge and practice status was measured using Likert Scale Score. Score '1' was assigned for each correct answer and score '0' for each wrong answer. As there were more than one question in assessing respondents' level of knowledge and practice, combined scores ('70' for 70 questions) were used to measure respondents' perspective and practice about coronary artery diseases. The levels of knowledge and practice were measured on a 0 – 4 Likert Scale, where 0 means 'grossly dissatisfactory' and 4 'highly satisfactory' with 'poor' 1, 'more or less satisfactory' 2, and 'satisfactory' 3 in between them. First the level of knowledge and practice were assessed for responses against each question. Then all these scores were added together to find an overall level of knowledge and practice. Data were collected from the respondents by a self-administered questionnaire. Collected data were processed and analyzed with the help of software SPSS (Statistical Package for Social Sciences) version 11.5. Statistical analyses were done with help of descriptive statistics, Chi-square ( $\chi^2$ ) Probability Test. Level of significance for all analyses was set at 0.05 and p-value < 0.05 was considered significant.

### Result:

In our study, the mean age was  $57.2 \pm 8.4$  years and youngest and oldest patients were 29 and 82 years respectively. Approximately two third (65.3%) of patients were urban residents and 34.7% rural residents. Nearly half (48.5%) of the patients were primary level educated, 32.6% secondary, 8.4% graduate, 6.3% higher secondary and 4.3% was post graduate. knowledge about the risk factors, 26.3% of patients mentioned effect of smoking, 15.8% diabetes, 14.7% hypertension, 9.5% family history of CAD, 4.2% obesity, 2.1% heredity. Diet, stress and others causes each comprised of 3.2% of patients, based on this categorization of Likert Scale, 5.3% of the respondents had highly satisfactory level of knowledge, 6.3% satisfactory and 12.6% more or less satisfactory and 22.1% had poorly satisfactory knowledge. About 54% of the respondents' answer was grossly dissatisfactory. Grossly dissatisfactory knowledge was significantly higher in rural respondents compared in urban respondents (78.8% vs. 40.3%,  $p = 0.006$ ).

Majority (90.5%) of the patients learn about coronary artery disease from hospital, 89.5% from doctors, 4.2% from friends and 5.3% from media.

**Table-I**

*Respondents' answer about risk factors of developing CAD (n = 95)*

Factors developing CAD	Frequency	Percentage
Effect of smoking	25	26.3
Diabetes	15	15.8
Hypertension	14	14.7
Obesity	04	4.2
Stress	03	3.2
Heredity	02	2.1
Diet	03	3.2
Family history of CAD	09	9.5
Others	03	3.2

\* Total may not correspond to 100% for multiple responses

**Table-II**

*Respondents' answer perception about symptoms of CAD (n = 95)*

Symptoms	Frequency	Percentage
Chest pain	42	46.2
Difficulty breathing or shortness of breath	17	18.0
Sweating	13	13.6
Nausea or vomiting	02	2.1
Fear of impending death	01	1.1

\* Total may not correspond to 100% for multiple responses

**Table-III**  
*Comparison of knowledge between urban and rural population*

Level of knowledge	Group		p-value
	Urban(n = 68)	Rural(n = 27)	
Grossly dissatisfactory	25(40.3)	26(78.8)	0.006
Poorly satisfactory	16(25.8)	5(15.2)	
More or less satisfactory	10(16.1)	2(6.1)	
Satisfactory	7(11.3)	00	
Highly satisfactory	4(6.5)	00	

#Chi-square (c<sup>2</sup>) Test was employed to analyzed the data. Figures in the parenthesis denote corresponding percentage

**Table-IV**  
*Distribution of respondents' answer how they learn about CAD (n = 95)*

Respondents answer	Frequency	Percentage
Hospital	86	90.5
Doctor/Nurse	85	89.5
Friend	04	4.2
Media	05	5.3

\* Total may not correspond to 100% for multiple responses

**Table-V**  
*Respondents' distribution by level of knowledge about CAD (n = 95)*

Level of knowledge	Frequency	Percentage
Grossly dissatisfactory	51	53.7
Poorly satisfactory	21	22.1
More or less satisfactory	12	12.6
Satisfactory	06	6.3
Highly satisfactory	05	5.323

**Discussion:**

Based on this categorization of Likert Scale, 5.3% of the respondents had highly satisfactory level of knowledge, 6.3% satisfactory and 12.6% more or less satisfactory and 22.1% had poorly satisfactory knowledge. About 54% of the respondents' answer was grossly dissatisfactory. Grossly dissatisfactory knowledge was significantly higher in rural respondents compared in urban respondents (78.8% vs. 40.3%, p=0.006). Robert<sup>12</sup> reported that nearly half of patients with a history of heart disease have poor knowledge about the symptoms of a heart attack and do not perceive themselves to have an elevated cardiovascular risk and 44 percent of the patients had a low knowledge level which was contrast with the present study. Assiri<sup>13</sup> also demonstrated

that the level of knowledge in the majority of patients was poor, the older and the less educated patients had a lower level of knowledge. The patients showed improved level of knowledge during their stay in the hospital. Majority (90.5%) of the patients learn about coronary artery disease from hospital, 89.5% from doctors, 4.2% from friends and 5.3% from media.

Among the risk factors of CAD, 26.3% of patients mentioned effect of smoking, 15.8% diabetes, 14.7% hypertension, 9.5% family history of CAD, 4.2% obesity, 2.1% heredity. Diet, stress and others causes each comprised of 3.2% of patients. Hlatky<sup>14</sup> described that patients with coronary disease were more likely to smoke cigarettes, and to have diabetes and hypertension and a history of prior myocardial infarction. Sharma<sup>15</sup> et al. also reported in his article 42% had chest pain. Hypertension (91% of all patients), 39% (n = 50) were diabetic. Lahiri<sup>16</sup> also found that hypertension was the most common risk factor [46 (54.7%)], followed by diabetes [29 (34.5%)]; 17 (20.2%) were smokers, 15 (17.8%) were dyslipidemic and 3 (3.5%) had a family history of premature coronary artery disease.

During hospital admission over 46% of patients complained of chest pain, 18% difficulty breathing or shortness of breath, 13.6% sweating, 2.1% nausea or vomiting and 1.1% fear of impending death. Kane<sup>17</sup> demonstrated that 64% of patients with heart disease have chest pain, 13% difficulty breathing, 11% sweating which was nearly consistent with our study.

**Conclusion:**

Coronary Artery Disease is a major killer worldwide. Public awareness of risk factors for coronary heart disease (CAD) is essential, but no previous measures of it exist in Bangladesh, where it is on the rise and the incidence of MI is dramatically increasing. Our study suggests that there is a lack of awareness among a sampled Bangladeshi population regarding modifiable risk factors of CAD. Level of education about this important health problem is unknown in our local population. We found the level of knowledge in the majority of patients was poor; the rural and less educated patients had a lower level of knowledge.

**Recommendations:**

1. Education on risk factors imparted through health programs is necessary to create awareness and thus prevent CAD.
2. Regular antismoking campaigns should be held for school and college students
3. Men's lifestyles put them at particular risk of CHD; therefore there is a clear need for more effective health promotion that encourages men to change their risk behaviors.

**Conflict of Interest :** None**References:**

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