

## Awareness on Cardio Vascular Diseases among Patient's Attendants in a Specialized Hospital in Dhaka, Bangladesh

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### Abstract

### Original Research Article

**Background:** Bangladesh is a developing country where more than 170 million people live, among them, more than 80% live in rural areas. Where people are suffering from various diseases. Cardio Vascular Disease (CVD) is a more common disease in Bangladesh. Hypertension is the most widely prevalent, largely preventable risk factor for CVD accounting for half of the deaths due to ischemic heart disease and stroke. Therefore, due to CVD and CKD, uncontrolled hypertension has huge implications for the disease burden. **Aim of the study:** The aim of the present study was to assess the status of awareness on CVD among the patient's attendants in National Institute of Cardiovascular Disease (NICVD), Dhaka, Bangladesh. **Methods:** This was a cross-sectional study. The study was conducted at National Institute of Cardiovascular Disease (NICVD), Dhaka, Bangladesh in collaboration with the Department of Public Health, Northern University, Dhaka, Bangladesh during the period from September 2017 to December 2017. Before starting data collection, written consent was taken from all the participants. A pre-designed questionnaire was used to collect data. All the results were calculated with the help of a computer by using the SPSS 22.0 version. Data were presented according to the variable of the study and shown in percentage. **Results:** In this study maximum number of participants, 56.82% had knowledge about ischemic heart disease, 32.58% had no idea about ischemic heart disease and 9.15% had knowledge about MI and 1.45% have knowledge about coronary artery disease. Maximum 83.83% of participants had knowledge about the risk factor of CVD but 16.17% had no knowledge about the risk factor of CVD. Among the total participants, as the main risk factor of CVD, hypertension was defined by 80%, smoking by 73%, alcoholism by 53%, high fat diet by 52%, DM by 50%, family history of diabetes by 34%, and sedentary lifestyle by 27%. The maximum, 79.2% participants had the idea about the sign-symptoms of CVD whereas 20.9% had not. Among total participants, 55.4% had knowledge regarding the prevention of CVD. **Conclusion:** Cardiovascular diseases are dangerous diseases that may lead to death if undiagnosed and untreated early enough. That is why awareness among the attendants is extremely important for effective treatment as well as CVD prevention. The present study shows that the majority of knowledge on cardiovascular disease among the attendant is not satisfactory to control cardiovascular diseases.

**Keywords:** Awareness, CVD, HTN, MI, CAD, Knowledge, Risk factors.

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## 1. INTRODUCTION

Bangladesh is a developing country where more than 170 million people live. Among them, more than 80% are living in rural areas. Here people suffer from various diseases around the year. Cardiovascular disease (CVD) is a very common disease in Bangladesh now. Among 22% of undiagnosed hypertensive and 17% of prehypertensive participants showed the prevalence of CKD in a recent study in the USA.

Therefore, uncontrolled hypertension has huge implications for the disease burden due to CVD and CKD [1]. Low awareness is common in populations in low-income settings including Bangladesh. Research has shown that greater awareness is associated with higher adherence to antihypertensive treatments and BP control [2]. Only 30-45% of people with hypertension were aware of their condition and only 8% had achieved target BP goals showed in a study in China.

However, BP target achievement after raising awareness and data are scarce on care-seeking behavior. It is largely an unrecognized and under-researched public health problem in Bangladesh, despite a huge disease burden attributable to hypertension and a very high rate of unawareness [3]. In this paper, we report the prevalence, awareness, and control of hypertension at baseline and explore the effect of raising awareness coupled with providing health messages urging visits to healthcare providers regarding BP and BP goal achievement among individuals with hypertension in urban and rural Bangladesh [4]. A recent study from rural Bangladesh demonstrated a dramatic increase in CVD mortality rates increased by 30-fold (from 100,000/16 to 100,000/483 per date) among males and 47-fold (from 7 deaths per 100,000/7 to 330 deaths per 100,000/330 per death) in females. A nationwide survey is needed to find out the current epidemiological aspects of CAD in the country [5]. In the undue susceptibility of the South Asian population to CAD, ethnicity has been suggested to play a role. CAD is clinically aggressive, angiographically extensive, and premature in onset in South Asians. Ethnicity was associated with increased morbidity and mortality after CABG and in-stent restenosis. But not mortality after PCI studies involving the immigrants abroad has been found among the South Asians. Associated with higher morbidity and mortality, Bangladeshis are even more prone to develop CAD [6]. Shortness of height is associated with a higher risk of heart attack and Bangladeshis are the shortest in the UK [7]. The pathogenesis of CVD remains incompletely understood. The interplay between environmental and genetic factors likely contributes to the pathophysiology of CVD. The risk factors which is 'classic' such as hypertension, DM, dyslipidemia, and smoking undoubtedly play a vital role. In addition, some emerging risk factors and yet some unrecognized factors may be important. These factors may explain the high prevalence of CVD in isolation, or in different combinations, in a genetically predisposed population in Bangladesh [8].

## 2. OBJECTIVE

### General Objective

- To assess the status of awareness on CVD among the participant's attendants in a specialized hospital in Dhaka, Bangladesh.

### Specific Objective:

- To identify the level of knowledge regarding the causes of CVD among the participants.
- To identify the level of knowledge regarding the risk factors of CVD among the participants.

## 3. METHODOLOGY

This was a descriptive type of cross-sectional study. The study was conducted at National Institute of Cardiovascular Disease (NICVD), Dhaka, Bangladesh in collaboration with the Department of Public Health,

Northern University, Dhaka, Bangladesh during the period from September 2017 to December- 2017. In total 101 attendants of patients of the mentioned hospital were selected as the study people. All the samples were collected by purposive sampling techniques. According to the inclusion criteria of this study, the patient's attendant who was willing to participate and give consent was included as the study population. On the other hand, according to the exclusion criteria of this study, attendants were not interested and were refusing to give informed consent. A semi-structured questionnaire was used as the data collection tool for the present study. After collection, the data was checked & verified daily and audited for errors and inconsistencies. All the results were calculated with the help of a computer by using the SPSS 22.0 version. Data were presented according to the variable of the study and shown as percentages. Descriptive statistics were presented with a frequencies table. Association was demonstrated with cross tables, Bar, Pie charts, and Line charts. For the better quality of the research standard, the proposal format provided by the university was followed. Interview questionnaire had been checking after collecting data in order to ensure its completeness, correctness, consistency. For the present study, permission was taken from the internal research committee of the Northern University of Bangladesh. The informed consent of each participant was taken during the interview.

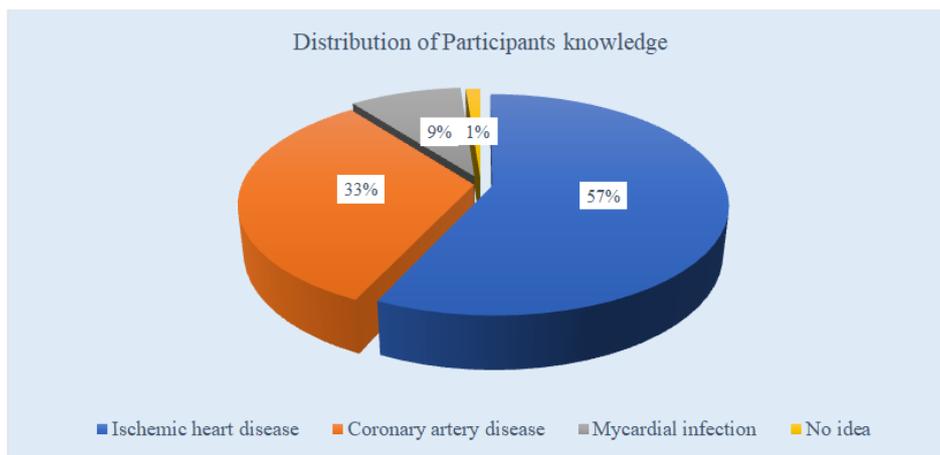
## 4. RESULT

In this study maximum number of respondents, 39.96% were from the age group of 26-35 years, 26.82% were from the age group of 36-45 and 19.96% were from the age group of 16-25 years. Maximum respondents, 61.4% were female and the rest of 38.6% were male. Among total respondents, almost 84% were Muslim, 8.9% were Hindu and the rest 5% were Christian. In this study, 29.9% of respondent's level of education was primary, 24.85% of respondent's level of education was higher secondary, 20.8% of respondent's level of education was graduation and above, 19.8% of respondent's level of education was secondary and the rest 4.65% respondents were illiterate. The maximum, 37.84% respondents of this study were service holders, 34.8% were day laborers, 9.84% were businessmen, 7.84% were students, 5.84% were housewives and the rest 3.84% were retired person. Most of the respondents, 20% were earning 26000- 30000 BDT per month, 13% were earning 16000-20000 BDT/month and 12% were earning 21000-25000 BDT per month. In this study maximum number of respondents, 56.82% had knowledge about ischemic heart disease, 32.58% had no idea about that and 9.15% had knowledge about MI and 1.45% had knowledge about coronary artery disease. Maximum, 83.2% of respondents had knowledge about the risk factor of CVD but 16.8% had not. Among the total participants, as the major risk factor of CVD, hypertension was defined by 80%, smoking by 73%,

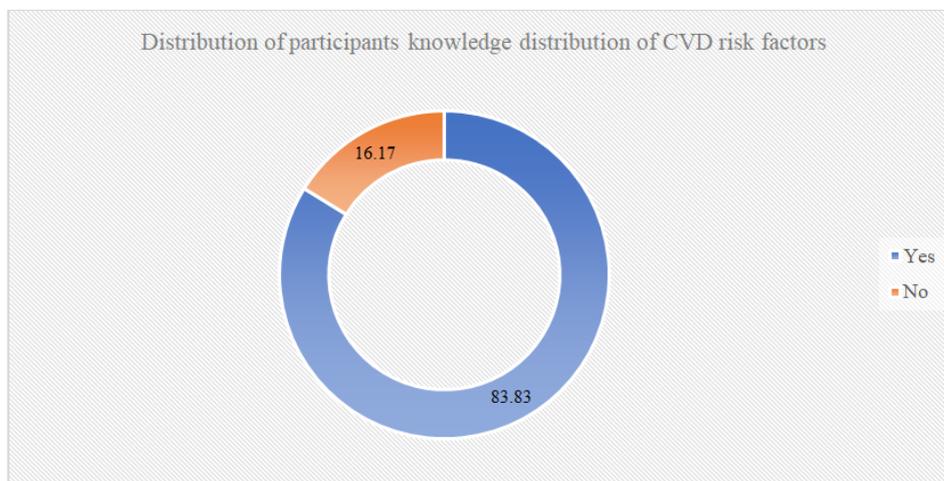
alcoholism by 53%, high fat diet by 52%, DM by 50%, lifestyle 27%.  
 family history of diabetes by 34%, and sedentary

**Table 1: Demographic status of the participants (N=101)**

Characteristics	n	%
Age distribution in year		
16-25 yrs.	20	19.96
26-35 yrs.	40	39.96
36-45 yrs.	27	26.82
46-55 yrs.	11	10.68
>56 yrs.	3	2.58
Level of education		
Illiterate	5	4.65
Primary	30	29.9
Secondary	20	19.8
Higher secondary	25	24.85
Graduation and above	21	20.8
Occupational status		
Student	8	7.84
Day laborer	35	34.80
Housewife	6	5.84
Service holder	38	37.84
Business	10	9.84
Retired person	4	3.84



**Figure 1: Distribution of the participants according to their knowledge on CVD (N=101)**



**Figure 2: Distribution of the participants according to their knowledge about the risk factor of CVD (N=101)**

**Table 2: Distribution of the participants according to their knowledge on specific risk factors of CVD (N=101)**

Risk factors	n	%
HTN	80	80.0
Smoking	73	73.0
Alcoholism	53	53.0
High fat diet	52	52.0
DM	50	50.0
Family history diabetes	34	34.0
Sedentary life style	27	27.0

## 5. DISCUSSION

This descriptive, cross-sectional study was conducted to find assess the awareness of CVD among the patient's attendants in a specialized hospital in Dhaka, Bangladesh. The study showed that regarding the age of the respondents 39.96% were from the age group of 26-35 years, 26.82% were from the age group of 36-45 years and 19.96% were from the age group of 16-25 years with the mean age 32.22 years. In this study, 61.4% of respondents were female and 38.6% were male. Among them 84.2% were Muslim, 8.9% were Hindu and the rest 5 % were Christian. The majority of the respondent's educational levels were primary 29.9%, secondary 19.8%, higher secondary 24.85%. In South Asians, the nature of gene-environment interactions in the etiopathogenesis of CAD is central to a fuller understanding of the epidemic that elucidation of the genetic factors that predispose. The nature of gene-environment interactions in the etiopathogenesis which is equally applicable to CAD in Bangladesh [9, 10]. In this study, it was also revealed that 56.82% of respondents had knowledge about cardiovascular disease whereas 32.58% had not, 9.15% MI and 1.45% about coronary artery disease. Among the total respondents, a maximum of 84% knew risk factors of CVD, 16.8% had not. The respondents knew the name of the risk factors and they mentioned hypertension (80%), smoking (73%), alcoholism (53%), DM (50%), high-fat diet (52%), and family history of diabetes (34%). It was also revealed that 79% knew about the symptoms and 60% of respondents know about the treatments and complications of cardiovascular diseases. No statistically significant association was found between smokeless tobacco use in general and CAD among non-smoking adults in a case-control study of non-smoking Bangladeshi adults aged 40-75 years conducted in 2010 [11]. To dyslipidemia, liberal use of saturated fats and trans fats, deep frying, reuse of cooking oil, and overcooking leading to the destruction of folates may all contribute in this population [12]. Especially in younger adults probable explanations of rapid urbanization with less physical activities, environmental pollution, climate change, changes in dietary habits, and increasing access to day-to-day modern amenities leading to reduced physical activity and sedentary lifestyles [13]. To determine the lipoprotein profile of the population for a better understanding of the contribution of dyslipidemia

to the etiopathogenesis of CAD studies are needed [14]. The International Diabetes Federation estimated that 5.7 million (6.1%) and 6.7 million (7.1%) of people are suffering from DM and impaired glucose tolerance in 2010 in Bangladesh. That number is expected to rise to 11.1 million by 2030 [15]. By using the WHO STEP wise surveillance approach in adults aged  $\geq 25$  years Bangladesh Society of Medicine in collaboration with the DG Health Services and World Health Organization has carried out the Bangladesh non-communicable disease (NCD) risk factor survey 2010 from November 2009 to April 2010. The prevalence of hypertension was 17.9% in general, 18.5% in men, and 17.3% in women, according to the survey. Such a high prevalence of hypertension may contribute to the high prevalence of CAD according to the survey in Bangladesh [16].

## 6. LIMITATION OF THE STUDY

This preliminary study had a number of limitations. The cross-sectional, descriptive nature of the study was not strong enough to dig out the concrete findings. The sample size was comparatively small due to the shortage of time and financial constraints during the research period and for that reason, the result could not be generalized.

## 7. CONCLUSION & RECOMMENDATION

Cardiovascular diseases are dangerous diseases that may lead to death if undiagnosed and untreated early enough. That is why awareness among the attendants is extremely important for effective treatment as well as CVD prevention. The present study showed that knowledge on cardiovascular disease among the attendant was not satisfactory to control cardiovascular diseases. The study showed lifestyle modification as a very important to control CVD whereas the peoples should avoid smoking and alcoholism. Diabetes mellitus, hypertension, sedentary lifestyle, fast-food, and high fat-taking habits are found as some major risk factors for CVD in this study. We would like to recommend conducting similar more studies in several places to find more concrete results.

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