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Awareness about Coronary Artery Disease (CAD) among Relatives of CAD Patients

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ABSTRACT

Background: The decision to modify the cardiovascular risk factors remains with the individuals and in order to modify their lifestyle, the individual should be aware and able to perceive them as 'risk factors'. This study was conducted to determine the level of awareness among relatives of patients diagnosed to have CAD

Methodology: Cross-sectional study design was used and the study population included family members of all the CAD patients attending the outpatient clinic of the hospital between the years 2011 - 2012. A total of 291 relatives participated in the study. The data collected through pilot pre-tested questionnaire.

Results: Stress (92.8%) and hypertension (91.8%) were the highest aware risk factor among the family members. Awareness for non-modifiable risk factors such as age (63.2%) and family history of CAD (60.8%) was poor compare to other. A majority of the family members were aware about four symptoms of CAD such as tightening of the chest, chest pain, sweating, and shortness of breath.

Conclusion: Our hypothesis that relatives of patients with known CAD would have more knowledge of risk factors was confirmed by the data and this increased awareness in the present study could be due to the fact that recently more emphasis is being given to non-communicable disease.

Key words- Cardiovascular risk factors, stress, hypertension, Modifiable risk factor, Diabetes

INTRODUCTION

WHO factsheet states that, Middle and Lower income countries have been most affected by non-communicable disease between year 2000-12(1). In India, we are witnessing a major health transition from communicable to non-communicable diseases in recent years. Ischemic heart disease, Stroke, Lower Respiratory infections and Chronic Obstructive Lung disease(COPD) were the major killers through the previous decade and among these four major non-communicable diseases Cardiovascular diseases have taken the king's prey¹. The high risk and eclectic prevalence of Coronary Heart Disease amongst the general Indian population is already established² and the most of cases are due to its prevalent risk factors³. Cardiovascular risk factors are generally classified into two main categories:

those that can be modify and those that cannot be modified. Modifiable or partially modifiable risk factors consist of smoking; lack of exercise, elevated cholesterol level, hypertension, obesity, and diabetes and non-modifiable risk factors includes age, sex and family history of cardiovascular disease.⁴

Most of the above stated risk factors are related to the lifestyle of an individual and therefore are modifiable. The decision to modify the risk factors remains with the individuals and to modify their lifestyle, the individual should be able to perceive them as 'risk factors' and for this the knowledge and awareness about such lifestyles are essential for behaviour change and lifestyle modification thus preventing the disease onset. The knowledge about CAD among the various population groups

is essential for educators and policy makers but there are not many studies in this regard in India.

Relatives of a patient with CAD, we hypothesize could be a group better informed because of two reasons. One could be their association with the patient, which gives them a clear view of the patient's lifestyle just by observation. The latter is that the patient is diagnosed with CAD, which could have included a brief discussion with the consultant about the patient's disease as we are referral hospital and patient do not come here for primary consultation. Hence, this study was conducted to determine the level of awareness among relatives of patients diagnosed to have CAD.

METHODOLOGY

A cross sectional study designed was applied to assess the awareness about CAD among family members of patients recently diagnosed with CAD. This hospital based study was conducted in the outpatient clinic of DDMM Heart Institute, which is 55 bedded tertiary healthcare establishment in a semi urban area of Gujarat. The study was started after obtaining permission from the respective Institutional Review Board and Ethics Committee.

The study population included family members (relatives) of all the CAD patients attending the outpatient clinic of the hospital between the years 2011 - 2012. Family members who refused or were unable to give consent were excluded. When a patient had more than one family member accompanying, the family member closest in family line to the patient was enrolled in the study.

The sample size for the study was estimated assuming that at least 50% of respondents would have adequate knowledge about coronary artery disease, an absolute precision of 6% was used for estimation and based on that, total of 291 patient relatives were enrolled in the study. The eligible participants were selected by systematic sampling. Every fifth patient's relatives were enrolled as around 30-50 patients OPD per day. They were enrolled according to the sequence of OPD registry until the sample size was achieved. The participants were explained about the study and were administered the questionnaire only after obtaining voluntary participation consent. All the participants who refused to participate in the study were excluded and the consecutive patient's family member was enrolled as participants if agreed to give consent for the study. The participants were administered with a pilot pre-tested questionnaire in English/Gujarati. The questionnaire included questions to assess awareness about risk factors, symptoms and prevention of CAD. The risk factors part included question about diabetes, high chole-

sterol, smoking, physical inactivity, high blood pressure, age, family history of CAD, overweight, and stress.

Continuous data were presented as means with standard deviations and Categorical data were presented as percentages with 95% confidence interval. The data was entered and analysed using statistical software Epi info7.

RESULTS

The demographic characteristics of the participants enrolled in the study are given in Table1. The mean age was 42.12 (± 13.96) years and 61.2% of the family members were males. The socioeconomic status was assessed according to Kuppaswamy's classification that is based on education, occupation, income of family head.

About 21.3% (95%CI 16.9%-26.3%) of the family members were aware of all the nine risk factors for coronary artery disease. The awareness level for each individual risk factor ranged from a lowest of 60.8% through a highest of 92.8%. Stress 92.8% (95%CI 89.2%-95.2%) and hypertension 91.8% (95%CI 88.4%-94.6%) were the highest known risk factors among all risk factors. But almost 99% study participants knew at least one risk factor for CAD in present study (Table-2).

A majority of the family members were aware about four symptoms of CAD such as tightening of the chest, chest pain, sweating, and shortness of breath (Table-3).

Table1: Demographic characteristics of Participants

Variable	Frequency (%)
Age (N=291)	
Less than 20 years	16 (5.5%)
21-40 years	121 (41.5%)
41-60 years	125 (41.3%)
61-80 years	29 (10.0%)
Gender	
Male	178 (61.2%)
Female	113 (38.8%)
Education	
Illiterate	4 (1.4%)
Primary school	11 (3.8%)
Middle school	27 (9.3%)
High school	103 (35.4%)
School / diploma	47 (16.2%)
Graduate	82 (28.2%)
Post graduate	17 (5.8%)
Socioeconomic status	
Lower	84 (28.9%)
Middle	88 (30.2%)
Upper	119 (40.9%)

Table 2: Awareness level for individual risk factors of CAD among family members of patients with CAD

Risk Factor	Awareness %	95 % CI
Stress	92.8	89.2 – 95.2
Hypertension	91.8	88.4 – 94.6
Smoking	86.9	82.5 – 90.3
High Cholesterol	85.2	80.6 – 88.8
Over Weight	84.5	79.9 – 88.2
Physical Inactivity	82.8	78.0 – 86.7
Diabetes	68.7	63.1 – 73.7
> 35 years	63.2	57.5 – 68.5
Family History Of CAD	60.8	55.1 – 66.2
All Risk Factors	21.3	16.9 – 26.3

Table 3- Awareness about specific symptoms of CAD among participants.

Symptoms	Frequency (%)
Tightening of Chest	289 (99.3)
Chest pain	282 (96.9)
Sweating	272 (93.5)
Shortness of Breath	267 (91.6)
Headache	141 (48.5)
Vomiting	120 (41.2)

Table-4- Awareness about prevention of CAD among participants

Prevention	Frequency (%)
Low Salt Diet	272 (93.5)
Physical Activity	270 (92.8)
Control of Diabetes	261 (89.7)
Quit Smoking	261 (89.7)

The prevention strategies of CAD such as low salt/ low cholesterol diet, physical activity, control of diabetes and quit smoking were known among 93.5% (95% CI- 90.03% -95.75%), 92.8% (95% CI 89.22%-95.23%), 89.7% (95% CI 85.66%-92.68%) and 89.7% (95% CI 85.66%-92.68%) of the family members respectively (Table 4).

DISCUSSION

The present study aims at understanding the awareness of the family members of CAD patients regarding the disease and its risk factors. However, previous studies were available on CAD awareness among varied groups such as CAD patients⁵, public^{6,7}, students⁸, cohort of participants⁹, general population¹⁰, urban women¹¹, patients undergoing CABG and other patients but none on family members of CAD patients. In present study, the awareness about various risk factors was found quite high (about 60% for family history of CAD to highest 92% for stress). This could be due to the fact that recently more emphasis is being given to non-communicable disease as they are witnessing an increase prevalence and national program like

National Programme for Prevention and Control of Diabetes, Cardiovascular diseases and Stroke (NPDCS) are evidence of this change. Our hypothesis was that relatives of patients with known CVD would have more knowledge of risk factors was confirmed by the data.

It is known fact that awareness about modifiable risk factors such as obesity, hypertension, physical activity and cholesterol are positively associated with healthy behaviour. Behaviour modification has to be preceded by knowledge and awareness about the condition and without awareness life-style modification is not feasible. As previous studies have stated these modifiable risk factors can be modified only if the individual has awareness and identification of CVD risk factors⁵. INTERHEART study in 2004 established that 90% of first myocardial infarctions could be prevented by the modification of 9 factors. They consisted of both protective factors and the factors that increase risk. Most of these factors were included in the study except regular alcohol consumption and regular intake of fruit and vegetables because of the cultural and legal setting of Gujarat state, the investigators were getting biased answers for the questions in pilot study.

The awareness about the nine risk factors ranged between 60.8% and 92.8% among the family members of CAD patients. The important finding was that 99% of participants knew one or more risk factors out of these nine for CAD. MS Khan et al from Karachi also reported similar finding in their study where 96% patient with acute myocardial infarction would be able to find out at least one risk factor for heart disease.⁽¹²⁾

TT Nguyes et al reported in their study among Vietnamese American that only 59% knew that chest pain was key symptom of CAD¹³. In present study the family members had quite high awareness about chest pain (Table-3).

An interesting observation was that 89.7% of the family members identified control of diabetes as a preventive strategy for CAD but only 68.7% identified diabetes to be a risk factor for CAD. Saeed et al found out that 30% participant recognized diabetes mellitus as a modifiable risk factor of CAD in a waiting area of a tertiary level setting in India in 2009⁶. Diabetes as risk factor was the minimum awareness among the modifiable risk factors of CAD in few other studies^{10,14}. In present study setting 68.7% identified DM as a risk factor. Although it was least recognized risk factor among others risk factors like previous studies but this increase in proportion should be taken as a positive sign of awareness.

According to study by Wartak SA et al in 2009, 37% of the patients were able to identify all seven protective factors for CAD such as ideal body mass index, blood pressure, blood glucose cholesterol, not smoking, regular exercise, and healthy diet, with least recognition rates for exercise, healthy diet and diabetes⁵ and in the current study 76.3% participant had knowledge about four key preventive factors (table-4). Prabhakaran D reported in their study similar finding that poor awareness and control of diabetes and hypertension were major risk for serious outcome.¹⁵

In the Indian scenario, when a person is sick the family members are key decision makers of any health care provision to the patient, hence the awareness among family members plays an essential role in decision making. Also in the social scenario, meals are prepared for all the family members by the same person. Thus, the dietary factors affecting the index person (newly diagnosed CAD patient) remains common for the entire family. Thus family member's awareness is playing important role in disease prevention. Alm-Roijer et al also supported hypothesis that better knowledge improves adherence to lifestyle changes.¹⁶

CONCLUSION

Our hypothesis that relatives of patients with known CVD would have more knowledge of risk factors was confirmed by the data. This increased awareness in the present study could be due to recently more emphasis is being given to non-communicable disease. The prevalence of NCD is increasing and national program like NPDCS are doing large scale awareness programme for community.

In the Indian society, most of the health care decisions are made by the family members. Hence it is necessary for the family members to be aware. The present study revealed that, the awareness about coronary artery disease among family members of diagnosed patients was higher proportions compare to other studies among different population.

LIMITATION

This study had limitations like most of present study participants were limited to a single geographical region; the responses could have been different in other populations. The present study was conducted on the basis of the passive recall of risk factors that participants were relating with patient as they were asked to recognize them among a list of possible factors. We could not illustrate the subjects who refused participation. To reflect the attitude about awareness of the entire community,

and thus the whole country, large scales studies are required in the community setup because in India a large proportion of population does not have access to health facilities and prevention is only feasible option therefore this was limiting factor that we were not able to conduct this study in community.

RECOMMENDATION

Awareness is essential for lifestyle modification and thereby aides in primary prevention of CAD. Being aware of the risk factors will help the community and individual become aware of their chances of developing CAD and therefore will encourage them to adopt healthy lifestyle. Continuous community based awareness programs should be initiated to increase the level of awareness about CAD risk factors which will help in decreasing the morbidity and mortality due to CAD and decreasing the money and years lost to these diseases.

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