

## Original Research Article

# Study of perception and behaviour in patients with coronary heart disease about risk factors and life style modification in tertiary care hospital, Bhavnagar

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### ABSTRACT

**Background:** Non-communicable diseases are now the major cause of death in India, with cardiovascular diseases being the dominant cause. Very few studies had been done regarding patients perception of risk factors, behaviour change and counselling. So this study is based on patient perspective and role of health education for patients. The objective of the study was to identify the risk factors of CHD, to assess behaviour changes whether lifestyle and habits modified by patients of CHD, to assess perception, to assess effectiveness of counselling.

**Methods:** A cross-sectional study was conducted in 174 patients attending follow up Out Patient Department in Tertiary Care Hospital, Bhavnagar using questionnaire which includes personal data, BMI, history of risk factors, behaviour change and medical counselling. Data was analyzed by epi info and appropriate statistical tests were applied.

**Results:** Total 73 patients were addicted to tobacco; smoking or alcohol. Mean duration of addiction was 22.43 years. Counselling was given by doctors at the time of illness to 94% patients. Counselling regarding disease, risk factors, lifestyle modification has got positive effect in 96% patients and only 4% patients were in need of further future counselling.

**Conclusions:** More and more emphasis should be given to preventive aspect and population should be given counselling before actual illness.

**Keywords:** Coronary heart disease, Counselling, Life style modification, Risk factors

### INTRODUCTION

Non-communicable diseases are now the major cause of death in India, with cardiovascular diseases being the dominant cause.<sup>1</sup> South Asian countries of India and Pakistan contribute significantly to the global burden of cardiovascular diseases accounting for 75% of all deaths and 86.3% of all loss of disability adjusted life years.<sup>2</sup> Epidemiologic studies from various parts of the India indicate a prevalence of CHD 7% to 13% in urban and 2% to 7% in rural populations.<sup>3-7</sup> The country is going towards an epidemic of CHD and its risk factors. Urgent

measures must be taken to control the increasing risk factors otherwise the incidence of CHD will grow beyond control.<sup>8</sup> Cardiovascular risk factors such as hypertension, cigarette smoking, high blood glucose, physical inactivity, obesity, and elevated cholesterol levels are the leading causes of death worldwide.<sup>9-11</sup> Risk factors for coronary heart disease (CHD), such as diabetes, hypertension, dislipidemia, and obesity have been identified in India.<sup>12-14</sup> Differences in socio-economic status in the populations are also one of the factors affecting prevalence of CHD.<sup>15</sup>

Many studies had been done in past regarding prevalence and risk actors of CHD – all about disease perspective.<sup>16-</sup>

<sup>20</sup> Very few studies had been done regarding patients perception of risk factors, behavior change and counseling.<sup>21,22</sup> Improvements in diet, physical activity and other lifestyle measures can decrease absolute cardiovascular risk such as premature death, reduce the need for interventional procedures and improve quality of life of patients with existing CHD.<sup>23</sup> Modifiable risk factors are important for prevention of disease and premature mortality and it is widely accepted by researchers and public health professionals. So this study is based on patient perspective and role of health education for patients.

This study was conducted in tertiary care hospital, Bhavnagar to assess the perception and behavior in patients with CHD about risk factors and lifestyle modification.

## **METHODS**

**Study design:** It was a cross-sectional study.

**Study period:** Period of 5 months ranging from June 2016 to November 2016.

### **Study setting**

The study was conducted in Sir Takhtsinh Tertiary Care Hospital, Bhavnagar. Bhavnagar district is situated 255 kilometres south-west to Ahmadabad city of Gujarat. As per census 2011, the Bhavnagar city has a population of 605882 among them 315429 were male and 290453 were female. The literacy rate of Bhavnagar is 85%.

### **Inclusion criteria**

Patients of coronary heart disease attending OPD in tertiary care hospital, Bhavnagar were included in the study.

### **Exclusion criteria**

Exclusion criteria were patients who were not willing to participate in the study were excluded.

### **Selection of subjects**

Patients of coronary heart disease who were attending the OPD in tertiary care hospital, Bhavnagar constituted the sampling frame for the present study.

### **Sample size**

A sample size of 174 was calculated based on expected proportion of CHD patients at OPD, which was at rate of 13%, based on current hospital record statistics.

- Confidence level (CL)=95%
- Expected proportion (P)=0.13
- Total width of confidence interval(W)=0.1
- $N = 4Z_a^2 P(1-P)/(w^2) = 174$
- $Z_a = 1.960$

### **Data collection tool**

The patients were explained in detail about the study and written informed consent was taken from them. The questionnaire consists of the risk factor of coronary heart disease and perception regarding risk factors and lifestyle modification. Along with the above tool, socio-demographic information of the patient was collected in a pretested questionnaire. This information includes age, sex, education, occupation, body mass index, per capita income, history of addiction etc.

### **Variables**

The primary outcome variable was to identify the risk factor whether it was present or absent. The secondary outcome variable was to assess behaviour changes whether lifestyle and habits modified by patients of CHD. The third outcome variable was to assess the perception regarding risk factors. The fourth outcome variable was to assess effectiveness of counselling.

### **Statistical analysis**

Simple proportions were calculated.

### **Socioeconomic classification**

For socioeconomic status, modified Prasad's classification was used taking All India Consumer Price Index for Industrial Workers value of 266 for Ahmedabad in the month of October 2016.

### **Quality control**

The study procedures from recruitment till data entry were piloted for feasibility and for making any changes in the procedures. The 3<sup>rd</sup> version of questionnaire was used for the study. Data entry was done in Epi Info software version 7, with appropriate data checks in order to avoid errors in data entry.

### **Generalizability**

The study was conducted in the patients of coronary heart disease in tertiary care hospital, Bhavnagar, the study findings were generalizable to all the patients of coronary heart disease of the state of Gujarat. Sample size was calculated one and samples were taken randomly.

**RESULTS**

A total of 174 patients of coronary heart disease attending OPD in tertiary care hospital of Bhavnagar were included for analysis.

**Table 1: Socio-demographic information of patients of CHD attending OPD in tertiary care hospital, Bhavnagar.**

Variables	Groups	N (%)
<b>Sex</b>	Male	118 (68)
	Female	56 (32)
<b>Education</b>	Primary	84 (48)
	Secondary	35 (20)
	Higher secondary	6 (4)
	Graduate	49 (28)
<b>Modified Prasad socio-economic class</b>	Class I	67 (38)
	Class II	17 (10)
	Class III	27 (14)
	Class IV	52 (30)
	Class V	14 (8)
<b>BMI</b>	≥25	94 (54)
	<25	14 (8)

As presented in Table 1, 68% patients were male. The mean age of the patients was 56.27±9.33 years. Almost half (48%) of the patients were having primary education and 28% were graduate. 38% of the patients belonged to upper socio-economic class I, while 8% patients belonged

to lower socio-economic class IV. Of the 54% of the patients had BMI ≥25.

Approximately, 50% patients were addicted to tobacco chewing, smoking or alcohol. Mean duration of addiction was 22.43±11.99 years. For males it was 21.58±9.85 years, while for females it was 18.75±7.71 years.

**Table 2: Risk factor wise distribution of patients of CHD attending OPD in tertiary care hospital, Bhavnagar.**

Risk factor	N (%)
<b>Tobacco</b>	66 (38)
<b>Alcohol</b>	20 (12)
<b>Family History</b>	55 (32)
<b>Obesity</b>	93 (54)
<b>Diabetes</b>	38 (22)
<b>Hypertension</b>	146 (84)
<b>Sedentary lifestyle</b>	41 (24)
<b>Cholesterol</b>	66 (38)

As elucidated in Table 2, hypertension (84%) and obesity (54%) appeared as two major risk factors followed by tobacco (38%) and high cholesterol (38%). Alcohol (12%) appears to be a lesser risk factor followed by diabetes (22%).

The present study indicated that patients had good perception about all risk factors except stress and sedentary life style.

**Table 3: Status of risk factors modification of patients of CHD attending OPD in tertiary care hospital, Bhavnagar.**

Risk factors	Modifications	%	Reasons	%
<b>Tobacco</b>	Quit	24	Self motivation	15
			Family & friends support	5
			Medical advice	4
	Reduce	40	Self motivation	22
			Family & friends support	3
			Medical advice	15
Not quite	36	Just they couldn't	36	
<b>Alcohol consumption</b>	Quit	35	Self motivation	35
			Family & friends support	0
			Medical advice	0
	Reduce	15	Self motivation	10
			Family & friends support	5
			Medical advice	0
Not quite	50	Just they couldn't	50	
<b>Obesity</b>	Reduce	32	Self motivation	32
			Family & friends support	29
			Medical advice	0
Non reduce	68	Just they couldn't	68	
<b>Salt intake</b>	Reduce	100	Self motivation	26
			Family & friends support	2
			Medical advice	72
Non reduce	0	Just they couldn't	0	

Continued.

Risk factors	Modifications	%	Reasons	%
Cholesterol level	Reduce	90	Self motivation	29
			Family & friends support	5
	Non reduce	10	Medical advice	56
			Just they couldn't	10

As shown in Table 3, out of all the patients who were tobacco chewers, 24% were quitted tobacco chewing. Among the 12% of patients who consumed alcohol, 35% were quitted alcohol. Quitting of tobacco or alcohol was mostly self-initiated. There was a very minor role of family, friend support or medical advice. Number of quitting patients were very far less than the number of patients having perception about this. All (100%) of the patients had reduced their salt intake, while 90% of the patients had reduced high cholesterol diet. Out of 54% obese patients, 32% has reduced their weight. Medical advice played a major role in reducing salt intake, high cholesterol diet and weight (72%, 56%, 29%, respectively). Not quitting and not able to reduce, that was mainly because they couldn't and not due to stress.

Counseling about disease, risk factors and life style modification was given by doctors at the time of illness to 164 (94%) patients out of total 174 patients. This suggests good health facility set up in the region and better coverage of population regarding health education. These counseling regarding disease, risk factors, life style modification has got positive effect in 167 (96%) patients and only 7 (4%) patients are in need of further future counseling.

## DISCUSSION

In the present study there were 68% male and 32% were female. Almost similarly, James in his study among the patient of coronary heart disease in tertiary care hospital found that there were 62% male and 38% were female.<sup>24</sup> There were 84% male and 14% were female in the study of Sekhri in urban area.<sup>25</sup> There were 54% females in the study of Dabbak risk assessment and risk perception of coronary heart disease in Gaza Strip, Palastine found that

In the present study, the mean age of the patients was 56.27±9.33 years. Dabbak in their study found that the mean age of participants was 20.8±2.07 years.<sup>26</sup>

In the present study, hypertension (84%) and obesity (54%) were two major risk factors followed by tobacco (38%) and high cholesterol (38%). Diabetes was contributed to only 22%. James in his study found that diabetes or impaired glucose tolerance (79%) and dyslipidemia (71%) are the major risk factor for coronary artery disease followed by hypertension (39%) and cigarette smoking (24%).<sup>24</sup> Sekhri in their study found that dislipidemia (45.6%) was the major risk factor followed by hypertension (21%) and diabetes (14%).<sup>25</sup>

The present study indicated that patients had good perception about all risk factors except stress and sedentary life style. Dabbak in their study found that the overall level of perceived risk was moderate. Logistic regression analysis revealed that age and sex were associated significantly by higher level of total perception.<sup>26</sup> Crouch in their study in perception, knowledge & awareness of coronary heart disease among rural Australian women found that only half of the mothers were aware about the risk factors such as hypertension, high cholesterol, smoking and obesity.<sup>27</sup>

## CONCLUSION

Hypertension and obesity were the most commonly identified risk factors for CHD by the patients. CHD patients modified their behaviour based on the identified risk factors. Reducing salt intake and high cholesterol in their diet were the major modifications. Patients had a perception that the risk factors were responsible for their CHD. Counseling during their OPD visits were effective in their behavior modification.

## Recommendations

Patients attending OPD for complaints other than CHD should be considered as an opportunity to assess and counsel for risk factors of CHD.

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