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Assessment of cardiovascular healthcare awareness among qualified adult population of Navi Mumbai: A questionnaire based study

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Abstract
Background: *Cardiovascular diseases contributed to 28·1% of the total deaths and 14·1% of the total Disability Adjusted Life Years in India in 2016 and the count is continuously rising. So, this study is done to see the level of cardiovascular healthcare awareness among qualified adult population of Navi Mumbai.*
Methods: *51 graduate/postgraduate adults visiting a consultant cardiologist's clinic during cardiac healthcare camps in the months of January to March 2019 at Navi Mumbai were given a 20 point questionnaire about cardiovascular healthcare awareness. Result is expressed in percentage.*
Results: *Most participants consider that their health status is good. About 53% exercise regularly. But about 64% of the participants are overweight /obese. About 59% participants get routine cardiovascular medical examination done regularly. About 47% suffer from one or more chronic diseases like Diabetes, Hypertension, Heart disease, Hyperlipidemia etc. and 26.5% also have the family history of Diabetes. Approximately 51% participants have the knowledge about the symptoms of heart attack. All of them consider that cardiac healthcare camps are very useful. But Mediclaim policies are held by only 41% of them.*
Conclusion: *The cardiovascular healthcare awareness of qualified adult population of this specific area is considerably good, but a higher level of awareness is required and must be created among all citizen.*
Keywords: *Body Mass Index, Cardiovascular healthcare awareness, Navi Mumbai, Questionnaire.*

Introduction

Currently, noncommunicable diseases, such as cardiovascular disease, stroke, kidney & respiratory diseases and trauma are the leading causes of death worldwide.[1]
According to a study published in December 2018, cardiovascular diseases contributed to 28·1% of the total deaths and 14·1% of the total Disability Adjusted Life Years in India in 2016. 23·8 million prevalent cases of ischaemic heart disease and 6·5 million prevalent cases of stroke were estimated in India. The leading risk factors for cardiovascular diseases include dietary risks, high systolic blood pressure, air pollution, high total cholesterol, tobacco use, high fasting plasma glucose and high body-mass index.[2]

A healthy body brings happiness to life and the family. In order to encourage people to adopt a cardio protective lifestyle; little is known about knowledge of cardiovascular risk factors in general population. Knowledge is an essential step in developing a more cardio protective lifestyle. A study done by Issa et al (2009) in a developing country showed that there is a great deal of failure in terms of qualified personnel, lack of planning and proper healthcare awareness among people.[3]

Since there is limited knowledge in the general population about this disease, we tried to estimate the current level of awareness regarding CVD and their risk factors in this study. As we know, "education" is a strong predictor of cardiovascular risk factor knowledge. Higher knowledge is associated with higher education.[4]So, keeping all these in mind, this study has been done on the qualified (graduate/postgraduate) adult population of Navi Mumbai to assess their cardiovascular healthcare awareness.

Materials and Methods

This cross-sectional study was carried out in the qualified adult population visiting a consultant cardiologist's clinic during cardiac healthcare camps, organized once a month at Navi Mumbai. The study was to assess their knowledge regarding cardiovascular diseases. Individuals who did not have a communication and perception problem (dementia, Schizophrenia etc.) were included in the study. A total of 51 participants were included. They were given a 20point questionnaire to solve & submit. After completing the questionnaire, participants' physical measurements (body weight in kilograms and height in centimeters) were taken. This data was collected in the months of January to March 2019.Their Body mass index (BMI) was calculated using the height and weight with the following formula: BMI = weight [kg] /height $[m]^2$.[5]

The questionnaire was as follows-

You are a- a. Male b. Female

Your age group (years)- 1. <40 2. 41-50 4. 51-60 5. 61-70 6. 71-80

Your qualification- a. Graduation b. Post graduation

Your body weight in kilograms-_____

Your height in centimetres-_____

Type of diet – Vegetarian/ Non- vegetarian

(More than one answer can be ticked at some places)

Q.1) How is your health status?

a. Excellent b. Good c. Fair d. Poor

Q.2) Do you exercise/ do yoga regularly?

a. Yes b. No

Q.3) Do you suffer from any of these chronic diseases?

a. Diabetes b. Hypertension c. Obesity d. Heart disease e. Deranged lipid profile f. None

Q.4) Do you go for routine (once a year) cardiac healthcare check up (blood tests for diabetes/ lipid profile etc., Blood pressure, ECG etc.)?

a. Yes b. No

Q.5) Do you have any family history of any of these diseases?

a. Diabetes b. Hypertension c. Heart disease d. Don't know

Q.6) Do you smoke or drink?

a. No b. Yes, I smoke c. Yes, I drink

Q.7) When was the last time you had your blood pressure checked?

a. Within the past year (anytime less than 12 months ago)

b. Within the past 2 years (more than 1 year ago but less than 2 years ago)

c. More than 2 years ago

d. Never had it checked

Q.8) Do you think changing eating habits, cutting down on salt, reducing alcohol intake and exercising help lower your blood pressure?

a. Yes b. No c. Don't Know

Q.9) About how long has it been since you last had your blood cholesterol checked?

a. Within the past year (anytime less than 12 months ago)

b. Within the past 2 years (more than 1 year ago but less than 2 years ago)

c. More than 2 years ago

d. Never had it checked

Q.10) Can the Body Mass Index (BMI) Chart tell you if you are overweight?

a Yes   b. No   c. Don't Know

Q.11) Can being overweight or obese put you at risk for developing high blood cholesterol?

a. Yes   b. No   c. Don't Know

Q.12) Is it true that only people with high blood cholesterol should follow a heart healthy diet?

a. Yes   b. No   c. Don't Know

Q.13) About how long has it been since you last had your blood glucose checked?

a. Within the past year (anytime less than 12 months ago)

b. Within the past 2 years (more than 1 year ago but less than 2 years ago)

c. More than 2 years ago

d. Never had it checked

Q.14) What do you understand by Ischemic Heart Disease (IHD)?

a.   Increased   blood   supply   to   the   heart
b. Reduced blood supply to the heart

c. Complete stoppage of blood supply to the heart

d. Don't know

Q.15) Which of these according to you are symptoms of a heart attack?

a. Pain or discomfort in the jaw, neck, or back

b. Chest pain or discomfort

c. Shortness of breath

d. All of these

Q.16) Do you know what are the conditions that can precipitate IHD?

a. Hypertension   b. Diabetes   c. Hyperlipidemia

d. All of these   e. Don't know

Q. 17) Do you know what are the risk factors that can lead to IHD?

a. Alcoholism   b. Smoking   c. Obesity   d. Stress

e. All of these   f. Don't know

Q.18) Is being physically active a way to reduce your risk for heart disease?

a. Yes   b. No   c. Don't Know

Q.19) Do you hold any mediclaim policy on your name?

a. Yes   b. No

Q. 20) Do you think cardiac healthcare camps are useful for the society?

a. Yes, very useful   b. Not so useful   c. Completely useless

Results were obtained after analysing the data and were presented in percentage in tabulated form.

Results

Out of 51 participants, 53% were males, while 47% females. Among them, 17.6% were less than 40 years, 17.6% in 41-50 years, 17.6% in 51-60 years, 41.2% in 61-70 years and 5.9% in 71-80 years group. All of them were graduates while 23.5% post graduates also. 41.2% were vegetarian while 58.8% nonvegetarian. Body weight of 35.3% was normal (BMI- 18.5-24.9), 52.9% overweight (BMI- 25-29.9) and 11.8% obese (BMI- 30 and above).[5]

Rest of the details are presented in Table 1.

Table 1

Q. 1	Excellent	Good		Fair	Poor
Your health status	0%	82.3%		11.8%	5.9%
Q. 2	**Yes**			**No**	
Regular exercise/ yoga	52.9%			47.1%	

Q. 3	Diabetes	Hypertension	Obesity	Heart disease	Deranged lipid profile	None
Chronic diseases	11.8%	41.2%	5.9%	17.6%	11.8%	52.9%

Q. 4	Yes			No	
Routine cardiac healthcare checkup	58.8%			41.2%	

Q. 5	Diabetes	Hypertension	Heart disease	Don't know
Family history	23.5%	0%	0%	76.5%

Q. 6	No		Yes, I smoke		Yes, I drink	
Smoke or drink	88.2%		11.8%		0%	
Q. 7	Within the past year		Within the past 2 years		More than 2 years ago	Never had it checked
Your blood pressure checked	78.4%		17.6%		4%	0%
Q. 8	Yes		No		Don't know	
Changing eating habits etc. help lower BP	49%		17.6%		33.3%	
Q. 9	Within the past year		Within the past 2 years		More than 2 years ago	Never had it checked
Your blood cholesterol checked	37.2%		17.6%		33.3%	11.7%
Q. 10	Yes		No		Don't Know	
Can BMI tell you are overweight	21.5%		11.8%		68.6%	
Q. 11	Yes		No		Don't Know	
Being overweight- risk for high cholesterol	31.4%		0%		68.6%	
Q. 12	Yes		No		Don't know	
Only people with high cholesterol to follow a heart healthy diet	3.9%		58.8%		37.2%	
Q. 13	Within the past year		Within the past 2 years		More than 2 years ago	Never had it checked
Your blood glucose checked	33.3%		37.2%		29.4%	0%
Q. 14	Increased blood supply to heart		Reduced blood supply to heart		Complete stoppage of blood supply	Don't Know
IHD	11.8%		17.6%		29.4%	41.2%
Q. 15	Pain/discomfort in jaw, neck or back		Chest pain or discomfort		Shortness of breath	All of these
Symptoms of heart attack	0%		49.1%		0%	50.9%

Q. 16	Hypertension	Diabetes	Hyperlipidemia		All	Don't know
Conditions that can precipitate IHD	52.9%	17.6%	5.9%		23.5%	11.8%

Q. 17	Alcoholism	Smoking	Obesity	Stress	All	Don't know
Risk factors for IHD	11.8%	5.9%	5.9%	23.5%	52.9%	0%

Q. 18	Yes		No		Don't know	
Physical activity to reduce risk of heart disease	64.7%		0%		35.3%	
Q. 19	Yes			No		
Mediclaim policy	41.2%			58.8%		
Q. 20	Yes, very useful		Not so useful		Completely useless	
Cardiac healthcare camps are useful	100%		0%		0%	

Discussion

As found in this study, about 64% of the patients are overweight /obese. According to a study done in India, one of every two individuals were considered physically inactive.[6]So, it's very interesting to find out here that about 53% of qualified adults have the habit of doing regular exercise and 65% know that physical activity reduces the risk of heart disease. This means that they have the awareness to keep themselves fit.

In the urban areas of India, the prevalence of diabetes mellitus has almost doubled in the past 20 years, from 9% to 17%.[7]It is estimated that the number of individuals with diabetes mellitus will increase to an alarming 101 million by 2030.[8] Regarding hypertension, its prevalence in adult Indians is estimated to be 30%.[9] Also, serial epidemiological studies in India suggest a rapid rise in the mean levels of total cholesterol, low-density lipoprotein cholesterol, non–high-density lipoprotein cholesterol, and triglycerides.[10] In the ICMR-INDIAB study, only 20% of the population had all lipid parameters (total cholesterol, low-density lipoprotein cholesterol, triglycerides, and high-density lipoprotein cholesterol)

within the normal range.[11]In our study, about 47% suffer from one or more chronic diseases like Diabetes, Hypertension, Heart disease, Hyperlipidemia etc. and 26.5% also have the family history of Diabetes.

Approximately 88% of people don't drink or smoke, while rest 12% smoke. This is in accordance to a study which says that prevalence of smoking is (14%) and smoking prevalence is higher among men (24%) than among women (3%).[12]

A good percentage (59%) of people go for routine cardiac healthcare checkups and 78% got their blood pressure checked within last year. But only 37% got their lipid profile and 33% blood glucose checked within last year. 49% know that lifestyle modifications help in lowering blood pressure. About 69% don't know about BMI (Body Mass Index) and also the fact that obesity increases the risk of developing high blood cholesterol.[13]

It's nice to know that 59% people understand that a heart healthy diet is needed for everyone. Even in the 2 most economically prosperous states, Maharashtra and Tamil Nadu, the WHO recommended consumption of >5 fruits and vegetables daily is only observed among 24% and 1% of people, respectively.[14] Also, the consumption of refined grain products has increased in comparison with the consumption of whole grains.[15]

About 51% participants know the symptoms of heart attack. Regarding the basic pathophysiology of Ischemic Heart Disease, 41% don't know, while 12% have wrong conception about it. Only 24% participants have the knowledge about the diseases that can precipitate heart disease but the risk factors are known by majority of them (53%). Only 41% hold a mediclaim policy on their name. It is good to know that 100% people consider that the cardiac healthcare camps are very useful for common people.

Conclusion

On the basis of the key findings of the present study, an array of concluding remarks is attempted. Not smoking & drinking, maintaining a healthy weight and regular exercise can reduce one's risk of having metabolic diseases. With increasing number of voluntary organizations, government agencies and private cooperations, we can achieve this. Though the cardiovascular healthcare awareness of qualified adult population of this specific area can be considered good, a higher level of healthcare awareness is required and must be created among all citizen to make the country's social and economic development more meaningful.

Limitations of the Study

1) This study is done on a small set of population. It can be extended to a larger population having different qualification and socioeconomic levels.
2) Similar type of studies can be done based on awareness of diseases like diabetes, hypertension, cancer etc. to enlighten common people about these diseases by organizing health camps.
3) Similar studies can be stratified according to different age groups.

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