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KNOWLEDGE ABOUT RISK FACTORS AND WARNING SYMPTOMS IN PATIENT SUFFERING FROM CARDIOVASCULAR DISEASES

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Contribution

JZ, MZ, SZ concieved the idea, planned the study and drafted the manuscript. QM, RZ helped in acquisition of data and did statical analysis. KA, MH drafted the manuscript and critically reviewed manuscript. All authors contributed significantly to the submitted manuscript.

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ABSTRACT

Objective: To assess the knowledge level of different patients about risk factors, warning symptoms and preventive measures of cardiovascular diseases.

Methodology: This observational cross sectional study was conducted at Cardiology Department Ayub Teaching Hospital (ATH), Abbott bad from 15 June 2015 to 10 Aug 2015. The study population was selected using systematic random sampling. They were asked about risk factors knowledge and warning symptoms of cardiovascular disease. Data was analyzed using SPSS version 21.

Results: A total of 171 patients were included. Of these, 117(68.4%)were males with mean age of 54.63 ± 8.32 years. Of them urban population was 88(51.5%).Out of 171 patients, 24(14%) were unable to answer any question, 20.5 % said fatty food, 6.5% smoking and 12.8 % lack of exercise, while obesity, cholesterol ,high blood pressure, depression and diabetes was considered as risk factor by 17.6%,5.8%,2.3%,17%,and 3.5% of the patients respectively. According to Cardiovascular Disease Risk Factors Knowledge Level (CARRF-KL) 18.1% had poor, (57.9 %) fair, (18.7 %) good and 5.3 % had excellent knowledge about risk factors of cardiovascular diseases. About 70.2% considered chest pain as warning sign of cardiovascular disease.

Conclusion: Most of the population of low socioeconomic status is unaware of the risk factors related to cardiovascular diseases, while awareness about CAD warning symptoms was good.

Key Words: Cardiovascular Disease, Risk Factors, CARRF-KL, Knowledge, Urban Population

INTRODUCTION

Cardiovascular diseases are a group of disorders of the heart and blood vessels that include coronary heart disease, cerebrovascular disease, peripheral arterial disease, rheumatic heart disease, congenital heart disease, deep vein thrombosis and pulmonary embolism.[1]

Cardiovascular disease is the leading cause of death worldwide, although there is a trend toward a decrease in developed countries but the incidence of cardiovascular diseases is likely to increase in developing countries. About 80% of deaths due to cardiovascular diseases and 87% of health deteriorating conditions occur in developing countries. One in five men and one in seven women die from coronary heart disease.[2] In 2008 Thirty one percent deaths occurred due to cardiovascular diseases. An estimated 17.3 million people died from cardiovascular diseases in 2008. About 23% of women and 18% of men will die within one year of a first recognized heart attack. Total number of death due to cardiovascular disorder in 2008 was 17,327,000.[3]

According to the latest World Health Organization (WHO) data published in April 2011, deaths due to Heart disease in Pakistan reached 196,258 which is 15.36% of total deaths. Nearly 200,000 deaths occurs every year due to cardiovascular diseases.[4]

Although about 200 risk factors have been identified for this disease group classified as modifiable and non-modifiable factors, the factors which can be controlled are, hypertension, hyperlipidemia, obesity, diabetes mellitus, unhealthy dietary habits, smoking, physical inactivity and stress. International study demonstrated that over 90% of the global myocardial infarction risks can be attributed to 9 modifiable risk factors.[5]

This study was carried out in Ayub Teaching Hospital in order to inquire about the knowledge of risk factors and warning symptoms in patient suffering from cardiovascular diseases.

METHODOLOGY

This observational cross sectional study was carried out among the patients of cardiovascular diseases admitted in cardiology department ATH Abbottabad, from 15th june 2015 to 10th august 2015, to assess the knowledge level of different patient about risk factors of cardiovascular diseases. Patients were selected using systematic random sampling method. Data was collected by filling questionnaires after obtaining informed consent and was analyzed using SPSS version 21. Descriptive statistics were computed for different variables. Frequencies and percentages were calculated for qualitative variables like gender, risk factors, alarming symptoms, knowledge about

risk factors etc., while mean ± standard deviation were calculated for quantitative variables like age. A pre-tested questionnaire consisting of questions about risk factors of CVDs and four general categories of questions were commonly used in surveys which are as follows:

1. General Information and bio data of the patient.

2. Awareness of risk factors for CHD which included knowledge about the risks of high blood cholesterol, hypertension, smoking, excess weight and lack of exercise.

3. Recognition of symptoms and warning signs.

4. Preventive measures.

We also developed the Cardiovascular Disease Risk Factors Knowledge Level (CARRF-KL) Scale in the light of the literature data. A person who had knowledge of 1 or no risk factors and symptoms was categorized in poor, and who had knowledge of 2,3 and 4 or more risk factors along with symptoms were placed in fair, good and excellent category respectively.

RESULTS

A total of 171 patients were included in the study. Of them, 117(68.4%) were males. Mean age of 54.63±8.32 years with minimum of 22 years and maximum of 96 years. About 88(51.46%) patients belonged to urban and 83 (48.5%) to rural population (Table 1). About 53 (30.9%) were diabetics, 67(39.18%) hypertensive, 29(16.95%) dyslipedemic and 47(27.48%) were smokers. All the patients were queried about risk factor knowledge. Out of these patients, 24(14%) were unable to answer any question, 20.5 % said fatty food, 6.5% smoking , 12.8 % lack of exercise, 17.6 % considered obesity, 5.8 % cholesterol, 2.3 % high blood pressure,17 % depression and 3.5 % claimed diabetes as risk factor (Table 5). According to CARRF-KL 18.1% had poor, 57.9 % had fair, 18.7 % had well and 5.3 % had excellent knowledge about risk factors of cardiovascular diseases (Table 4). About 70.2% were able to describe chest pain, as warning sign of cardiovascular diseases (Table 2). The detail of demographic variables is shown in table 1. Patients socioeconomic status is shown in table are given in following table 3.

DISCUSSION

Chronic non-communicable diseases (CNCDs) are reaching epidemic proportions worldwide. These conditions cause the greatest global share of death and disability, accounting for around 60% of all deaths worldwide. They account for 44% of premature deaths. The number of deaths from these diseases is double than deaths from a combination of infectious diseases, maternal and perinatal conditions, and nutritional deficiencies. Non-communicable diseases

Table 1: Demographic Variables of Study Population

Variables		Frequency (n)	Percentages (%)
Male		117	68.4
Female		54	31.6
Diabetes		53	30.99
Hypertension		67	39.18
Smoking		47	27.48
Dyslipedemia		29	16.95
Obesity		28	16.4%
Urban		88	51.5
Rural		83	48.5
Education Level	Primary	25	14.6
	Middle	20	11.7
	Matric	25	14.6
	Graduation	36	21.1
Occupation	Labour	10	5.8
	House wife	42	24.6
	Govt Servants	18	10.5
Positive Family History		42	24.56
Self-employee		20	11.7
Any other		14	8.2
Farmer		16	9.4
None		51	29.8

Table 2: Alarming Symptoms for Cardiovascular Diseases Described by Study Population

Variables	Frequency (n)	Percentages (%)
Chest pain	121	70.8
Radiating Pain to Arm and Shoulder	23	13.5
Sweating	8	4.7
Nausea	2	1.2
Black out	2	1.2
Bluish Appearance	2	1.2
Coldness	1	0.6
Difficulty in Breathing	2	1.2
High Blood Pressure	1	0.6
No idea	1	0.6
Chest Pain with Nausea	2	1.2
Chest Pain with sweating	1	0.6
Pain in Legs	1	0.6
Severe Pain in Hand	1	0.6
Throbbing Sensation	3	1.8

(NCDs) kill 38 million people each year.[6] Of the 57 million global deaths in 2008, 36 million (63%) were due to NCDs and 17.3 million (30%) were due to CVDs. In 2008, nine million people died of NCDs prematurely before the age of 60, some eight million of these premature deaths occurred in low and middle-income countries (LMICs).[7] One of the International study demonstrated that over 90% of the global myocardial infarction risks can be attributed to 9 modifiable risk factors.[5] Between 1982 and 1992, the Canadian provincial heart health surveys were conducted according to which 60% recalled fat in food, 52% smoking and 41% lack of exercise, but only 32% identified weight, 27% cholesterol and 22% high blood pressure.[8] While in our study 62% people were using ghee and another 7% desi ghee. Another study done which says regular and persistent smoking, increased blood pressure and cholesterol level and other such type of behavioral risk factors like over weight increases the risk of CVDs and another study according to which smoking cessation is the single most preventable and attainable cause of premature death, also support our findings given in table 6 that smoking cessation also reduces CVDs.[9-13] In our study the risk factors described by patients are obesity (16.4%), depression (17%), ghee consumption (20.5%), smoking (5.3%), hypertension (5.3%), lack of exercise (5.8%), diabetes (3.5%) and other factors (Table 6). This is comparable with an international study according to which, high blood pressure results in 13% of CVD deaths, while tobacco results in 9%, diabetes

Table 3: Socioeconomic Status of Study Population

Variables	Frequency (n)	Percentages (%)
Poor	31	18.1
Fair	99	57.9
Good	32	18.7
Excellent	9	5.3

Table 4: Knowledge about Risk Factors for Cardiovascular Diseases

Variables	Frequency (n)	Percentages (%)
Poor	31	18.1
Fair	99	57.9
Good	32	18.7
Excellent	9	5.3

Table 5: Risk Factors Identified by Patients under Study Population

Variables	Frequency (n)	Percentages (%)
No risk factors knowledge	24	14
Fats	35	20.5%
Smoking	11	6.5%
Lack of exercise	22	12.8%
High Blood pressure	4	2.3%
High Cholesterol	10	5.8%
Depression	29	17%
Diabetes	6	3.5%
Overweight	29	17%

6%, lack of exercise 6% and obesity 5%. Rheumatic heart disease may follow throat infection.[14] In comparison studies the differences are simply due to the reason that obesity and increased cholesterol and even smoking has a huge prevalence in developed countries compare to developing countries like ours because of socioeconomic status, knowledge, interest and education etc. According to Adler, coeducation, socioeconomic status and income are interrelated.[15] Also the prevalence of overweight in high-income and upper-middle-income countries was more than double of low-and lower-middle-income countries.

Symptoms described by patients were chest pain (70.8%), pain radiating to shoulder and fore arm (13.5%), sweating (4.7%), nausea (1.2%), black out (1.2%) as shown in table 3. Hypertension is one of the most important causes of premature death worldwide and the problem is growing; in 2025, an estimated 1.56 billion adults will be living with hypertension.[16] Study also shows that 5.8% of risk is contributed by raised cholesterol and lack of exercise. In 2008, the prevalence of raised total cholesterol among adults - defined as total cholesterol of 6.2 mmol/l (240 mg/dl) or higher - was 9.7 per cent (8.5 per cent for males and 10.7 percent for females). In low-income countries, around 25 per cent of adults have raised total cholesterol, while in high-income countries; over 50 per cent of adults have raised total cholesterol.[17] Physical inactivity increases the risk of heart disease by 50%.[8] There are currently about 1 billion smokers in the world today. One or more pack of cigarette smoking daily can increase cardiovascular disorder up to 200%.[18] In our study 31.6% identified diabetes as risk factor. The risk of cardiovascular events is from two to three times higher in people with type 1 or type 2 diabetes.[19] Obesity is strongly related to major cardiovascular risk factors such as raised blood pressure, glucose intolerance, type 2 diabetes and dyslipidemias.

Table 6: Preventive Measures Described by Patients for Cardiovascular Diseases

Variables	Frequency (n)	Percentages (%)
Proper Exercise	39	22.8
Balanced Diet	35	20.5
Smoke Cessation	11	6.4
Preventing Hypertension	7	4.1
Fatty Food Exclusion	21	12.3
No Idea	19	11.1
By Eating Green Vegetables	9	5.3
By Increase Omega3 Intake	1	0.6
Control Sugar level	2	1.2
Eating Fish	2	1.2
Eating Less Fatty Food	3	1.8
Exercise and Food Care	1	0.6
Less Salt Consumption	3	1.8
Prevent Diabetes	2	1.2
Happiness	6	3.5
Taking Medications	1	0.6
Taking Rest	8	4.7
Warmth	1	0.6

Patients with extreme obesity present with STEMI at younger ages. Worldwide, at least 2.8 million people die each year as a result of being overweight or obese.[20] It is estimated to cause about 31% of coronary heart disease also affected by socioeconomic status and health.[21,22] Depression and history of attempted suicide are significant independent predictors of premature CVD and IHD mortality in both sexes.[23,24] In our study 0.6% cause was attributed to medications with 6.4% use of contraceptives (table 1). Microbes like chlamydia pneumonia and cytomegalo virus can increase cardiovascular disease especially Atherosclerosis.[25] According to studies first-degree relative having history of coronary heart disease or stroke before the age of 55 years (for a male relative) or 65 years (for a female relative) also doubles the risk of CAD. Gender difference is significant as men are at greater risk of developing heart disease than a pre-menopausal woman. But after menopause, a woman's risk is similar to a man's. Risk of stroke is similar for men and women.[26] Ethnic origin plays a role. People with African or Asian ancestry are at higher risk of developing cardiovascular disease than other racial groups.[27]

The knowledge level of our study population shows that 18.1% has poor, 57.9% fair, 18.7% good and 5.3% excellent level of knowledge about CVDs risk factors. So programs related to CVDs risk factors and its prevention are needed to reduce the risk factors of CVDs. Several studies also shows that programs for educating people about CVDs risk factors were effective in improving the health and decreasing the risk factors.[28,29] In America white people are highly educated about risk factors of CVDs than blacks, such as African Americans.[30]

CONCLUSION

Individuals especially elders and low socioeconomic status people have poor knowledge about risk factors for CVD. Also except for chest pain, admitted patients were not aware about the alarming symptoms of cardiovascular diseases. So special educational program are needed to address this low knowledge issue.

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