Original Article

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PERCEPTION, KNOWLEDGE AND AWARENESS OF CORONARY ARTERY DISEASE AMONG PATIENTS PRESENTING TO RAWALPINDI INSTITUTE OF CARDIOLOGY: A TERTIARY CARE CARDIAC FACILITY

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ABSTRACT

Objective: To assess the perception, knowledge and awareness among patients attending the outpatient department of Rawalpindi Institute of Cardiology.

Study Design: Descriptive cross sectional study.

Place and Duration of Study: The study was conducted at Rawalpindi Institute of Cardiology from July to December 2014.

Material and Methods: Overall 145 patients attending the outpatient department of Rawalpindi Institute of Cardiology were enrolled in the survey. Patients of age ≤20 years and ≥80 years, health care professionals and students were excluded. Semi-structured questionnaire was filled for each participant.

Results: One hundred and eighteen (81.4%) patients were aware of the fact that coronary artery disease was curable but only 88 (60.8%) of patients were aware that it could be prevented. Only 52 (35.9%) of the people correctly said that it was caused by the blockade of the coronary arteries and strangely 25 (17.2%) answered that it was due to some valvular problem.

Conclusion: There is a lack of knowledge among the common masses regarding the causation, risk factors, and treatment of coronary artery disease

Keywords: Coronary artery disease, Knowledge attitude practices, Patient satisfaction.

INTRODUCTION

Cardiovascular diseases are becoming a major health burden in developing countries. In the year 2000, 16.7 million people died from cardiovascular disease, accounting for 30.3% of all deaths worldwide; more than half these deaths were in developing countries[1]. South Asia (Pakistan, India, Bangladesh, Nepal, and Sri Lanka) represents more than a quarter of the developing world, and is likely to be strongly affected by the increase in cardiovascular disease. It is generally observed that people from South Asia are known to have a high coronary risk; this tendency has been well recorded in studies of expatriate south Asians[2,3].

In the indigenous population of south Asia, high prevalence rates for CHD risk factors are also apparent. In India, prevalence of coronary artery disease has been reported as being 11% in 2001[4]; however, sizeable populations such as in Pakistan have no published data for prevalence or incidence of coronary artery disease, and causal and temporal relations between risk factors and this disease have not been established.

Cardiovascular disease (CVD) is one of the most preventable causes of death in the world, due to the fact that the majority of its risk factors are preventable or controllable, such as hypertension, dyslipidaemia, diabetes, obesity, smoking, lack of physical activity, stress, unhealthy dietary practices and diabetes. The social and environmental causes of CHD and stroke are well recognized, and enhanced population-based prevention programs could result in a significant decrease in CVD morbidity and mortality[5]. Knowledge about CVD and its modifiable risk factors is a vital pre-requisite to change the individual's health attitudes, behaviors and lifestyle practices[6]. Knowledge improvement to the recognition of heart attack and stroke symptoms will lead to earlier presentation to medical care that may result in better patient outcomes[7]. Good

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knowledge about CVD risk factors among individuals will aid them to be proactive in decreasing their risk since the majority of the risk factors are modifiable[8].

The estimation of the baseline knowledge about CVD among the population has significant public health application as it helps in developing targeted educational programs[9]. Knowledge of CVD, its symptoms and risk factors have been studied worldwide in various populations. Some of these studies like ours have focused on patients[9]. Yet, little is known about the CVD knowledge in Pakistan. Hence, this study was designed to determine the level of current CVD knowledge among Pakistani individuals presenting to a tertiary cardiac facility, and to identify factors that are associated with knowledge levels. The CVD knowledge assessed included level of awareness of types of CVD, warning symptoms of heart attack or stroke, and CVD risk factors

MATERIAL AND METHODS

A descriptive, cross-sectional survey was conducted in the outpatient and emergency departments of Rawalpindi Institute of Cardiology.

Inclusion criteria

Patients presenting to the Emergency and out-patient department of the hospital with diagnosis of some form of coronary artery disease were included for the study.

Data were collected anonymously via self-administered questionnaire. Those who agreed to take part in the study were given the questionnaires, which were completed anonymously and collected after completion. They were assured for confidentiality and gave written consent to participate in the study. Incentives were not offered for completion of the questionnaire.

Exclusion criteria

Exclusion criteria were expatriates, age ≤ 20 years and ≥ 80 years, and health care professionals and students.

The pre-tested questionnaire consisted of four sections, and it comprised of both open-ended and close-ended questions. The first section included seventeen items to provide information about the demographic and characteristics of the respondents (age, gender, marital status, educational level, employment). Section two consisted of questions regarding the knowledge about coronary artery disease and the various risk factors implicated in their causation. The third section included questions regarding the symptoms and complications of coronary artery disease. Forth section of the questionnaire included questions related to knowledge in preventive measures.

Data were entered into the Statistical Package for Social Sciences (SPSS, version 21, SPSS, Chicago, IL, U.S.A.) and descriptive analysis was conducted. The results were reported as percentage (95% confidence interval) and median (Interquartile range). Mean +/- S.D for quantitative variables like age. Analysis of variance (ANOVA test) was

Table-1: Distribution of study population according to gender, marital status and education.

Variables	Values
Gender n(%)	
Males	75 (52.17%)
Females	70 (47.83%)
Marital Status n(%)	
Single	7 (5.5%)
Married	138 (94.5%)
Education Level n(%)	
Uneducated	43 (30.3%)
Educated	102 (70.3%)
5 years of education	21 (15.1%)
8 years of education	33 (23.1%)
10 years of education	32 (23.1%)
12 or more years of education	12 (8.2%)

applied to determine whether any significant association exists between the variables like age, education status and various factors being assessed as the cause, symptoms of CAD. *p* value < 0.05 was considered to be significant.

RESULTS

Overall 145 patients were enrolled in the study. Their mean age was 50.17 years and ranged from 21 years to 81 years. The distribution of the study population according to gender, marital status and education level is tabulated in table-1 which shows that majority of subjects were married men. 30% (44) of the subjects were uneducated.

As far as their knowledge about the cause of coronary artery disease was concerned only 52 (35.9%) people correctly said that it was caused by the stenosis or blockade of the coronary arteries. 42 (29.0%) people said that it was caused by the weakness of the heart muscles and strangely (25) 17.2% answered that it was due to some valvular problem. 25 (17.2%) were unaware of the causation of coronary artery disease.

When inquired about the various risk factors causing coronary artery disease only 85 (58.6%) patients knew that uncontrolled diabetes is a risk factor for coronary artery disease. Regarding the complication of coronary artery disease 58 (40%) said that myocardial infarction is a complication of coronary artery disease and very strangely only 7 (4.8%) patients knew that congestive cardiac failure

Table-2: Perceptions about various aspects of cad with respect to the education level.

Variables	Total study population (n=145)	Education level		*p* -value
		< 8 or 8 years	>8 years	
RISK FACTORS				
Stress	107 (73.8%)	91 (63.1%)	128 (88.5%)	0.003
Smoking	129 (89.0%)	121 (83.3%)	140 (96.7%)	0.038
High lipid Diet	111 (76.6%)	107 (73.8%)	116 (80.3%)	0.437
High salt intake	100 (69.0%)	90 (61.9%)	114 (78.6%)	0.090
Obesity	108 (74.3%)	86 (59.4%)	119 (81.9%)	0.045
Over work	59 (40.7%)	55 (38.1%)	64 (44.3%)	0.416
Diabetes	85 (58.6%)	76 (52.3%)	97 (67.2%)	0.172
Hypertension	114 (78.6%)	107 (73.8%)	130 (89.6%)	0.048
Complications				
MI	58 (40%)	45 (30.8%)	78 (54.1%)	0.08
CCF	7 (4.8%)	10 (7.1%)	2 (1.6%)	0.11
Curability/Preventability				
CAD is curable	118 (81.4%)	103 (70.8%)	131 (90.1%)	0.06
CAD is preventable	88 (60.8%)	73 (50.5%)	107 (73.7%)	0.04
Symptoms				
Chest pain	128 (88.4%)	126 (86.9%)	135 (93.4%)	0.13
Chest heaviness	92 (63.5%)	90 (61.9%)	95 (65.5%)	0.78
Shortness of breath	83 (57.8%)	81 (55.9%)	88 (60.6%)	0.77
Palpitations	101 (69.8%)	95 (65.4%)	107 (73.7%)	0.36
Dyspepsia	48 (33.2%)	29 (20.2%)	55 (37.7%)	0.06
Treatment Option				
Medical treatment	108 (74.5%)	100 (69.0%)	121 (83.6%)	0.10
PCI	69 (47.4%)	59 (40.4%)	71 (49.2%)	0.51
CABG	72 (49.8%)	62 (42.8%)	88 (60.5%)	0.10
Heart transplant	14 (9.9%)	10 (7.1%)	19 (13.1%)	0.45

can be a complication of CAD as summarized in table-2.

DISCUSSION

Coronary artery disease indeed is a major cause of morbidity and mortality worldwide. To prevent the disease so as to reduce mortality the knowledge about the disease, the risk factors, the symptoms and treatment among the general population is of paramount importance. Studies in Pakistan to assess the public level of awareness and knowledge about the coronary artery disease and its implications are lacking. We therefore tried to assess the level of awareness, perception and knowledge of the patients about coronary artery disease, presenting to a tertiary cardiac center of Rawalpindi, a large city of the country.

As far as the cause of coronary artery disease was concerned only 35.9% of patients were aware of the fact that it was caused by the stenosis, blockade of the coronary artery disease. In another study done in Pakistan by Jafery et al 9 only 14% of the people were aware what coronary artery disease really was?.

The relatively poor knowledge about modifiable risk factors for CHD, including uncontrolled diabetes 84 (58%), physical inactivity, stress 59 (40.7%) in our study population has been seen in other studies on South Asians[10,11]. However most people recognized that smoking 129 (89%), uncontrolled hypertension 113 (78%) and high lipid diet 110 (76%) as important risk factors for coronary artery disease. There was no significant difference in the responses of uneducated and educated people regarding the risk factors involved in coronary artery disease implying the general apathy and unawareness among the common masses about the coronary artery disease.

Interestingly, majority of the people 128 (88.4%) were correctly able to recognize chest pain as the warning sign of coronary artery disease. This is in contrast to the study done by Jafery et al[9] where only 36% and 54% by Awadet al[12].The increasing trend probably could be due to the public's increased awareness through the print and electronic media.

Although 118 (81.4%) patients were aware of the fact that coronary artery disease was curable but only 88 (60.8%) of patients were aware that it could be prevented. A similar result was shown by Almaset al[13]. This is an area of concern as lack of knowledge regarding the fact that coronary artery disease could be prevented could be a major hindrance in preventing the epidemic.

As far as the treatment of coronary artery disease was concerned most of the people said that medical treatment was the only possible option. Less than half of the people were aware that percutaneous coronary intervention 69 (47.7%) and coronary artery bypass graft surgery 72 (49.8%) were viable treatment options. Interestingly, similar answers were given by both educated and uneducated group of people. Similar trends were seen in a survey conducted by Gupta et al in Indian population[14].

The knowledge about the awareness of the symptoms of CAD has also an impact on the diagnosis and proper treatment of CAD. Education level has direct impact on the level of awareness of these symptoms. Interestingly in our study education level had no impact on correctly recognizing symptoms of CAD. This was in contrast to studies conducted in Singapore[15,16] in which education level had an impact in correct recognition of symptoms attributable to CAD. The reason for this may be that our center being a tertiary care, most patients were thought to be those who were referred from secondary or primary care center.

CONCLUSION

There is a lack of knowledge among the common masses regarding the causation, risk factors, and treatment of coronary artery disease. This stresses the importance of the physicians to educate the patients about coronary artery disease. The print and the electronic media also have to play their role in educating people about coronary artery disease. Unless or until, the physicians, health workers and the media play their active role in

educating people about coronary artery disease, the prevalence of the disease will continue to increase and create a huge burden over the existing limited health resources of the country.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author

AUTHORS CONTRIBUTION

Imran Iftikhar and Hamid Sharif Khan, design analysis an interpretition, Azhar Mehmood Kayani, intellectual contribution and analysis

REFERENCES

1. Ahmed E, El-Menyar A. Management of Coronary Artery Disease in South Asian Populations: Why and How to Prevent and Treat Differently. Angiology. 2015;66:405-15.
2. Dodani S. Coronary Artery Diseases in South Asian Immigrants: Philosophy behind HDL Function. Endocrinol Metab Synd. 2015;4:e123.
3. Lee J, Heng D, Chia KS, Chew SK, Tan BY, Hughes K. Risk factors and incident coronary heart disease in Chinese, Malays and Asian Indian males: the Singapore Cardiovascular Cohort Study. Int J Epidemiol. 2001;30:983–88.
4. Sekhri T, Kanwar RS, Wilfred R, Chugh P. Prevalence of risk factors for coronary artery disease in an urban Indian population. Epidemiology BMJ. 2014;4:e005346
5. Pearson TA, Palaniappan LP, Artinian NT, Carnethon MR, Criqui MH, Daniels SR. American Heart Association Guide for Improving Cardiovascular Health at the Community Level, 2013 update: a scientific statement for public health practitioners, healthcare providers, and health policy makers. Circulation. 2013;127:1730-53.
6. Oliveira GB, Avezum A, Roever L. Cardiovascular disease burden: evolving knowledge of risk factors in myocardial infarction and stroke through population-based research and perspectives in global prevention. Front Cardiovasc Med. 2015;13(2):32.
7. O'Donnell MJ, Denis X, Liu L. Risk factors for ischaemic and intracerebral haemorrhagic stroke in 22 countries (the INTERSTROKE Study): a case-control study. The Lancet. 2010;(9735): 112–123.
8. El-Menyar A, Zubaid M, Shehab A. Prevalence and impact of cardiovascular risk factors among patients presenting with acute coronary syndrome in the Middle East. Clinical Cardiology. 2011;(34): 51–58
9. Jafary FH, Aslam F, Mahmud H, Waheed A, Shakir M, Afzal A. Cardiovascular health knowledge and behavior in patient attendants at four tertiary care hospitals in Pakistan–a cause for concern. BMC Public Health. 2005;5:124
10. Praveen PA, Kumar SR, Tandon N. Type 2 diabetes in youth in South Asia. Curr Diab Rep. 2015;15(2):571.
11. Mansikkaniemi K, Juonala M, Taimela S. Cross-sectional associations between physical activity and selected coronary heart disease risk factors in young adults. the cardiovascular risk in young finns study. Ann Med. 2011;44(7):733–744
12. Awad A, Nafsi AH. Public knowledge of cardiovascular disease and its risk factors in Kuwait: a cross-sectional survey. BMC Public Health. 2014;14:1131
13. Almas A, Hameed A, TipuSultan FA. Knowledge of Coronary Artery Disease (CAD) risk factors and Coronary Intervention among University Students. JPMA. 2008;58:553
14. Gupta R, Joshi P, Mohan V, Reddy KS, Yusuf S. Epidemiology and causation of coronary heart disease and stroke in India. Heart. 2008;94:16-26.
15. Swanoski MT, Lutfiyya MN, Amaro ML, Akers MF, Huot KL. Knowledge of heart attack and stroke symptomology: a cross-sectional comparison of rural and non-rural US adults. BMC Public Health. 2012;(12):283
16. Ratner PA, Johnson JL, Mackay M, Tu AW, and Hossain S. Knowledge of "heart attack" symptoms in a Canadian urban community: Clinical Medicine Insights. Cardiology. 2008;(2): 201–213,