ASSESSMENT OF PUBLIC AWARENESS ABOUT RISK FACTORS FOR CORONARY HEART DISEASE AMONG GENERAL POPULATION OF A UNION COUNCIL OF A MAJOR CITY

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Author's Contribution

SFH: Conduction of study and drafting of the manuscript. MZJ: Statistical Analysis and appraisal of findings in actual write up of the manuscript. SA: Critical review and appraisal of findings in actual write up of the manuscript. TZ: Critical review and appraisal of findings in actual write up of the manuscript. MHC: Critical review and appraisal of findings in actual write up of the manuscript. MIT: Critical review and appraisal of findings in actual write up of the manuscript

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ABSTRACT

OBJECTIVE: To determine the level of public awareness about the risk factors for coronary heart disease (CHD) and its association with demographic factors among general population of a union council.

MATERIAL AND METHODS: A cross sectional survey of general healthy population of a union council-54 of Gulberg Town, Lahore which included randomly selected 380 individuals. A structured questionnaire was used for assessing the knowledge of public awareness about risk factors of CHD. The variability in the level of knowledge was tested against different socio-demographic factors. Data was collected and analyzed on SPSS 20. Descriptive analysis of variables was performed to assess the distribution of data. Chi-square test/Fisher exact test as appropriate was used to find association between variables. All the tests were performed at 5 % (p< 0.05) level of significance.

RESULTS: Results revealed that 36.5% had high level of knowledge. Out of whom the most common awareness was about smoking as risk factor. The frequency of awareness about risk factors was 92%, 81%, 79%, 55%, 48% and 39% in study population identified smoking, fatty food, obesity, hypertension, high cholesterol and diabetes mellitus respectively. Only 12% were able to recognize physical inactivity as a risk factor. The high level of knowledge was significantly linked with education level more than matric (grade10), non-smoker, performing regular exercise, and having history of diabetes (p-value <0 .05)

CONCLUSIONS: There is inadequate level of knowledge about risk factors for CHD in general population. There are knowledge gaps especially regarding association of diabetes mellitus and physical inactivity with CHD. Certain groups particularly having low education, sedentary life style and smokers have low level of awareness about risk factors for CHD. These findings should be used to design public awareness strategies for primary as well as secondary prevention of CHD, thereby decreasing the burden of coronary artery disease.

KEY WORDS: Risk factors, CHD, Knowledge

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INTRODUCTION

The major public health related challenge for concerned authorities is increasing prevalence of coronary artery disease. It is the main cause of mortality in the world these days. Approximately 17 million of people suffered cardiovascular mortality each year.[1] The cardiovascular disease was once considered to be the disease of rich class but different studies have shown that it has epidemic trends in developing countries.[2] The most likely etiology of developing coronary artery disease in developing countries is lack of proper knowledge about its risk factor, urbanization and rapid adoption of sedentary life style.[3]

Pakistan is suffering from burden of both communicable and noncommunicable diseases. However little attention has been given to non-communicable diseases.[4] In our country the cardiovascular disease is increasing day by day which may be due to lack of public awareness programs, lack of exercise and stressful life style.[5]

There are many common risk factors for coronary artery disease which include diabetes mellitus, hypertension, smoking, hyperlipidemia, stress-ful life style, lack of exercise, reduced consumption of fruits and vegetables and consumption alcohol. The INTERHEART study has demonstrated reduced prevalence of myocardial infarction by modifying the risk factors.[6]

The American Heart Association started prevention strategies in 2010 to prevent the development cardiovascular diseases by identifying and modifications of some important known risk factors.[7]

Prevention of a disease is better than its cure. Developed countries have adopted healthy life style and public awareness strategies to prevent the development coronary artery disease. It has been noticed that there is lack of knowledge and awareness regarding risk factors of cardiovascular morbidity in our population and we should start such programs for primary prevention.[8,9,10]

Many socio-demographic variables including age, sex, marital status, socioeconomic status, educational level and type of residence are related with the level of awareness. Some specific factors including perceived susceptibility, tobacco use, sedentary life style, history of CHD affect the knowledge of risk factors for CHD.[3] Estimating the level of awareness in general population is essential for developing health education programs directed towards prevention for CHD. In Pakistan, studies regarding the knowledge of risk factors for CHD are limited and have estimated low level of awareness.[3,14,23]
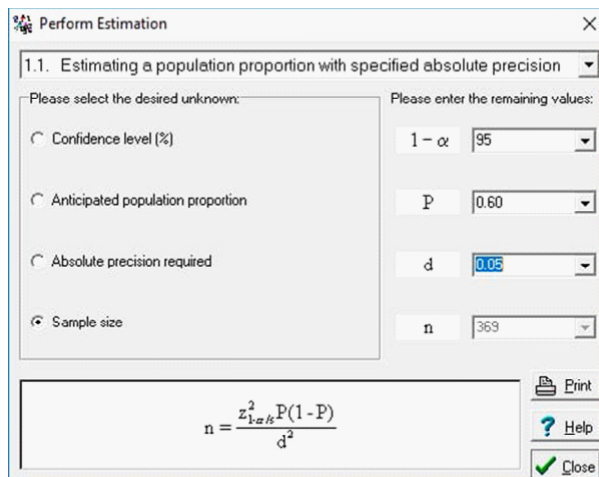
The study was carried out to assess the level of awareness about risk factor of CHD among general population and to see the association with socio-demographic factors.

MATERIAL AND METHODS:

This study was conducted in a lady health worker covered area of union council 54 of Gulberg Town, Lahore. Approval was sought from the concerned authorities of City District Government Lahore. There were eight lady health workers in this union council. Total houses in this union council covered with LHW program were 2240. The following formula was used to calculate sample size. Sample size was 369 individuals which was further increased by about 5% to account for contingency such as non-response or recording error. Hence sample size was 380 individuals.

A cross sectional survey was conducted by the researcher. Out of 2240 houses covered with LHW program, 360 houses were selected by simple random sampling method. A list of all individuals between the ages of 30-45 years in selected 360 houses was made. A sample of 380 people was selected from this list using Random Number Tables. Socio demographic information was collected on a performa. Pre-tested structured questionnaire was used for assessing the level of knowledge. Eight specific risk factors for determination of level of knowledge included in this study were smoking, lack of exercise, fatty food, obesity, hypertension, diabetes mellitus, high cholesterol level and consanguineous marriages. Each risk factor was given a score of 1 and then total score was calculated to classify the score into two categories. A categorical variable of knowledge was created:

Low Level of Knowledge: If 0 - 5 risk factors were correctly identified.

High Level of Knowledge: If 6- 8 risk factors were correctly identified.

This grouping of knowledge was based upon a study that has assessed knowledge of CHD.[14] Data was collected and analyzed on SPSS 20.Descriptive analyses were performed to assess the distribution of data. Chi-square test/Fisher exact test as appropriate were used to find out the statistical association of knowledge with socio-demographic and other factors at a significant level of 0.05.

RESULTS:

A total of 380 respondents participated in the study. About one third of the respondents (36%) had high level of knowledge. Mean knowledge score based upon the number of correctly identified risk factors for CHD was almost 04 (50 %). Very low percentage of study population was able to recognize seven risk factor for coronary disease i.e. 5%.

Almost 50%(190) were males and 50%(190) were females. About half of the respondents (46%) were having low level of education i.e. under matric / grade10. About half of the respondents (48.9%) were having monthly income between 10,000 to 20,000 Rs. Almost two third of the respondents were living as separate family. Majority of the respondents (91%) were married. About 46.6% of the respondents are currently employed. Current smokers in this study were about 17% while smokers were up to 40%. Only minority of the respondents (7%) were doing routine exercise. About 30%, 60% and 40% were having personal, family history of Diabetes mellitus, High Blood pressure, High Lipid

Table 1: Frequency of Knowledge of Specific Risk Factors. (n=380)

RISK FACTORS	Percentage
Smoking	91.85
Physical activity	12.15
Fatty food	80.7
Obesity	78.45
Hypertension	55
Diabetes mellitus	39.3
High cholesterol level	47.85
Marriages	10.1

Table 2: Awareness Source about Risk Factors. (n=380)

Awareness Source	Percentage
Family	32.2
Friends	8.6
Health Worker	14.3
Television/Radio	44.3
Print Media	5.2

Table 3: Association of level of Knowledge with Socio-Demographic Factors (n=380)

Socio-Demographic & other Factors		High level Knowledge %	Low Level Knowledge %	Chi Square/p value
Age (Years)	30-40	51.2	48.8	2.93/0.091
	40 and above	59.3	40.7	
Gender	Male	59.6	40.4	2.89/0.089
	Female	51.4	48.6	
Marital Status	Married	52.4	47.6	0.571/0.450
	Unmarried	56	44	
Education	Under Matric	44.1	55.9	13.42/<0.05
	Matric and above	59.3	40.7	
Currently Employed	Yes	50.7	49.3	0.234/0.628
	No	53.7	46.3	
Monthly Income	Below 10,000	44.4	55.6	2.60/0.107
	10,000 and above	54.5	45.5	
Current Smoker	Yes	25.4	74.6	78.56/<0.05
	No	65	35	
Routine Exercise	Yes	85	15	60.43/<0.05
	No	45.4	54.6	
History of diabetes	Yes	59.6	40.4	2.89/0.089
	No	51.4	48.6	
Family History	Yes	58.9	41.1	8.58/<0.05
	No	44.4	55.6	

level and/or Coronary Heart Disease.

Almost 91.85%, 80.7%,78.45% and 39.3% respondents were having knowledge about smoking, fatty food, obesity and diabetes as a risk factor. While regarding physical inactivity, only 12% were able to associate (Table 1).

The most important awareness source identified was (TV) television/ radio and family interaction (44% and 32% respectively). Health workers were a source of knowledge for only 14% while print media was a source in only 5% of the participants. (Table 2)

Table 3 show significant association of high level of knowledge with education, non-smoker, performing regular exercise, and having history of diabetes (p-value < .05).

DISCUSSION:

In this study, the level of awareness was quite low (i.e 36%) which was calculated according to the level of knowledge. There are seven common risk factors for coronary artery disease and public awareness about these risk factors is very essential. A study conducted by American Heart Association showed the good level of awareness around 40% of the population.[15,16] Similar percentage of good level of knowledge about risk factors was noticed in

a study conducted in Karachi which reported 42% high knowledge level.[3] Another study carried-out in the region of Abbottabad which showed that 28.7% of the study population had adequate level of knowledge about pre-disposing coronary artery disease risk factors.[8]

There were significant knowledge gaps and it was evident that majority of the study population had knowledge about some common risk factors like smoking and diabetes etc and they were ignorant about other common factors leading to the development of coronary artery disease. In a study that was conducted in Kuwait that showed 80% participants had knowledge about smoking as pre disposing risk factor.[17]

We have noticed in our study that the patients having the knowledge about lack of exercise as a risk factor was quite low (i.e 12.15%). The study conducted in Karachi had also showed similar kind of results.[3]

The participants had good knowledge about hypertension and hyperlipidemia as a leading risk factor for CAD. Similar results have been shown by a study done in India.[14,18] There are many causes of gaps in the knowledge that is the main cause of low level of public awareness about coronary artery disease. The public awareness can be easily improved by increasing literacy level. The study conducted showed significant link of better education level with knowledge about risk factor of CAD. These findings were consistent with the study carried out at Abbotabad which also emphasized the need of improving public awareness by improving the level of education. [22,14,8]

The participants who had history of hypertension, diabetes, hyperlipidemia etc. in their family members were also better aware of these mentioned risk factors which can lead to development of cardiovascular disease which indicates that public awareness has an important role in the prevention of coronary artery disease.[11]

There were certain limitations of this study. It was carried out in a defined locality which may include low level of knowledge in that population. So this study should be conducted over a larger population sample to recommend steps to be taken by authorities related to public awareness and preventive cardiology.

CONCLUSIONS:

There is inadequate level of knowledge about risk factors for CHD in general population. This study has identified knowledge gaps especially regarding association of exercise and diabetes mellitus with CHD. The study has also identified groups having low level of knowledge in population with low education, sedentary life style and smokers. These findings should be used to design health education strategies for primary as well as secondary prevention of CHD, thus reducing the burden of disease.

REFERENCES

1.World Health Organization. Cardiovascular diseases (CVDs) Fact sheet N°317 [Internet]. 2017 [Accessed May 2017]. Available from: http://www.who.int/mediacentre/factsheets/fs317/en/

2.Jafary FH, Aslam F, MahmudH, WaheedA, Shakir M, Afzal A, QayyumMA, Akram J, Khan IS, Haque IU. Cardiovascular health knowledge and behavior in patient attendants at four tertiary care hospitals in Pakistan.BMC Public Health.2005; 5: 124.

3.KhanMS, Jafary FH, Jafar TH, Faruqui AM, Rasool SI, Hatcher J, Chaturvedi N. Knowledge of modifiable risk factors of heart disease among patients with acute myocardial infarction in Karachi, Pakistan: a cross sectional study. BMC Cardiovascular Disorders[Internet].2006[Accessed 27 April 2006]. Available from: http://www.biomedcentral.com/1471-2261/6/18.

4.WHO Regional Office for Eastern Mediterranean. WHO country office in Pakistan, News/ [Internet]. 2013 [Accessed 1 October 2013].Available from: http://www.emro.who.int/pakistan/news.html

5.WHO Regional Office for Eastern Mediterranean. WHO country office in Pakistan, Programme areas, Non-Communicable Diseases [Internet]. 2010[Accessed 2010]Available from: http://www.emro.who.int/pakisstan/programmes_ncd.htm

6.Yusuf S, Hawken S, Ounpuu S, DansT, Avezum A, Lanas,F, McQueen M, Budaj A, PaisP, Varigos J, Lisheng L. On behalf of INTERHEART Study Investigators. Effect of potentially modifiable risk factors associated with myocardial infarction in 52 countries (the INTERHEART study): case-control study. The Lancet. 2004; 364(9438) 937-52.

7.American Heart Association. AHA Special Report: Defining and Setting National Goals for Cardiovascular Health Promotion and Disease Reduction:The American Heart Association's Strategic Impact Goal Through 2020 and Beyond[Internet]. 2010[Accessed 20 January 2010].Available from: http://circ.ahajournals.org/content/121/4/586.abstract

8.Zahid M,KazmiS, Farooq U,Khan IA, Aziz T, Aziz S, Rahim M. Knowledge of modifiable risk factors of cardiovascular diseases among patients with acute myocardial infarction. J Ayub Med Coll Abbottabad. 2014; 26(3):364-67.

9.HallSL,Lorenc,T. Secondary prevention of coronary artery disease. Am Fam Physician. 2010; 81(3): 289-96.

10.Wasif S. Pakistanis at higher risk of developing heart diseases: Report. [Internet]. 2011[Accessed 6 March 2011]. Available from: http://tribune.com.pk/story/128350/pakistanis-at-higher-risk-of-developing-heart-diseases-report/

11.Park K. Park's Text Book of Preventive and Social Medicine. 23rd ed. Jabalpur:BanarasidasBhanot Publishers; 2015. pp. 760-6.

12.Mahajan BK, Gupta MC. Textbook of Preventive and Social Medicine. 4th ed. New Delhi: Jaypee Brothers Medical Publishers; 2013. pp. 562.

13.SahaA, Poddar E, Mankad M. Effectiveness of different methods of health education: A comparative assessment in a scientific conference. BMC Public Health [Internet]. 2005 [Accessed 22 August 2005]. Available at: http://www.biomed-central.com/1471-2458/5/88

14.Saeed O, Gupta V, DhawanN, StrejaL, Shin J S, Ku M, Sanjeev- Bhoi S, Sanjay-Verma S.Knowledge of modifiable risk factors of Coronary Atherosclerotic Heart Disease (CASHD) among a sample in India. BMC International Health and Human Rights, [Internet]. 2009 [Accessed 4 February 2009]. Available from: http://www.biomedcentral.com/1472-698-X/9/2

15.Wartak SA, Friderici J, Lotfi A, Verma A, Kleppel R, Naglieri-Prescod D, Rothberg MB. Patients' Knowledge of Risk and Protective Factors for Cardiovascular Disease. Am J Cardiol.2011; 107(10): 1480-8.

16.Dodani S, Mistry R, Khwaja A, Farooqi M, Qureshi R, Kazmi K.Prevalence and awareness of risk factors and behaviours of coronary heart disease in an urban population of Karachi, the largest city of Pakistan: a community survey. J Public Health (Oxf). 2004; 26(3): 245-9.

17.Awad A, Al-Nafisi H. Public knowledge of cardiovascular disease and its risk factors in Kuwait: a cross-sectional survey. BMC Public Health. 2014; 14(1): 1131

18.Wild S, Roglic G, Green A, Sicree R, King H. WHO-global prevention of diabetes: estimates for the year 2000 and projections for 2030. Diabetes Care.2004; 27: 1047-53.

19. MooneyLA,FranksAM. Impact of health screening and education on knowledge of coronary heart disease risk factors. J Am Pharm Assoc. 2011; 51(6): 713-8.

20.Ebrahim S, Taylor F, Ward K, Beswick A, Burke M, Davey-Smith G. Multiple risk factor interventions for coronary heart disease [Internet]. 2013 [Assessed 28 February 2013]. Available from: http://summaries.cochrane.org/CD001561/multiple-risk-factor-interventions-for-coronary-heart-disease

21.PowersBJ, Danus S, Grubber JM, Olsen MK, Oddone EZ, Bosworth HB. The effectiveness of personalized coronary heart disease and stroke risk communication. Am Heart J. 2011; 161(4): 673-80

22.Varghese S. Knowledge regarding cardiovascular risk factors among people in South India: a community-based study. Nitte University Journal of Health Sciences. 2014; 4(1): 42-5.

23.Jones BP.PO1 Is knowledge of cardiovascular risk factors enough to bring about health promoting behavior in students? J Epidemiol Community Health. [Internet]. 2010 [Accessed 2010 Sep]. Available from: http://jech.bmj.com/content/64/Suppl-1/A34.1.abstract