

Awareness of Coronary Heart Disease among Patients Attending Ali Kamal Health Center in Sulaimani City



Medical Science

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ABSTRACT

Background: coronary heart disease is a major public health concern and continues to be the main cause of death all over the world, despite the decline in its incidence in many developed countries. It is caused by an interaction of multiple factors.

The objectives: to evaluate the awareness of coronary heart disease among adults attending Ali Kamal Health Center in Sulaimani city and identify factors associated with the awareness.

Method: a cross-sectional study was conducted on 923 patients attending Ali Kamal Health Center in Sulaimani city, from 2nd April to 2nd July 2011. Close-ended questionnaires were used to evaluate participants' awareness. SPSS version 17.0 was used for data analysis.

Results: among 923 studied participants; 50.1% were females, the mean age was 33±12 years. About 23.1% had high literacy level of institute, university or higher education. About 80.7% lived in the city . About 44.42% had good awareness level. Higher awareness scores were found among older age, higher educational levels ,personal history of coronary heart disease, diabetes mellitus, hypertension, dyslipidemia, other heart diseases and family history of coronary heart disease (p-value < 0.05).

Conclusions: the overall awareness level is accepted, awareness of coronary heart disease's risk factors is accepted. Awareness of coronary heart disease is associated with age, literacy level, presence of medical conditions and family history of coronary heart disease.

Introduction

Coronary heart disease(CHD) is the principal manifestation of cardiovascular diseases, it is the leading cause of morbidity and mortality worldwide.^[1] Overall Cardiovascular disease(CVD) therefore leads to substantial patient morbidity and through the management of stroke and heart failure, results in the highest healthcare utilization costs for any disease in many countries.^[2] CVD causes 30% of deaths globally .By comparison, infectious diseases account for 10% of global mortality.^[3,4] CHD is among the major causes of hospitalization and death in Europe ^[4] as well as in the US.^[5,6]

Starting as a child, many actions a person takes in daily life combine to establish much of their lifetime risk for developing heart disease.^[7,8] Leon found that even in utero, exposure to the mother's environment or lifestyle can influence the future risk of heart disease of the embryo or fetus.^[9] Although CHD has occurred throughout the ages, the rapid advance in diagnostic methods and improved treatment, together with publicity in the media, has raised awareness of CHD.^[10]

Modifications of cardiovascular risk factors require a change in lifestyle habits and behaviors..^[11,12] Community based prevention programs aimed at behavioral changes have been effective in decreasing the prevalence of cardiovascular diseases in developed countries.^[13,14]

Objectives:

- 1- To evaluate the awareness of coronary heart disease among adults attending Ali Kamal Health Center in Sulaimani city.
- 2- To Identify factors associated with the awareness.

Participants and methods

This study was approved by ethical committee of School of Medicine, University of Sulaimani. It was a cross-sectional study. Data were collected from 2nd April to 2nd July 2011. Total num-

ber of the study participants was 923 subjects.The participants were included from people attending Ali Kamal Health Center for various complaints. Ali Kamal Health Center in Sulaimani city which covers a wide area of different socio-economic status population , was established in 1st July 1998, patients are seen by general practitioners and has referral system to inside and outside centers .

Exclusion criteria:

- Age less than 18 years old.
- Mentally retarded patients.

As there was no standard questionnaire accepted to measure the knowledge level of individuals about CVD or CHD ^[9,15,16] the knowledge of participants were assessed using self designed questionnaire, the questions of which were designed depending on published relevant studies used to assess CHD awareness.

The questionnaire consisted of three parts: First part of the questionnaire contained questions regarding socio-demographic characteristics including age (year), gender, literacy level, residency .Literacy level was categorized to six groups coded from 0-5 including; illiterate, can read and write ,primary ,secondary, intermediate and institute, university or higher education respectively.Residency was categorized to four groups coded from 1-4 including inside city, district, sub-district and village.

Second part of the questionnaire included questions regarding medical background of the participants in the form of: Whether the participants had CHD diagnosed by physician, history of chronic diseases in the form of diabetes mellitus, hypertension, high cholesterol level, other heart disease and other chronic diseases diagnosed by physician. Family history of CHD was asked and the answers were categorized to three groups including first degree relative (parents, siblings or offspring), second de-

gree relative (uncle, aunt, niece, nephew or grand parents) and other members who live/lived in the family such as mother in law, father in law, husband or wife which could make the participant more aware of risk factors or the signs and symptoms of CHD.

Third part of the questionnaire included questions about awareness of CHD regarding its definition, questions on risk factors of CHD. The definition of CHD was asked as multiple choice questions, right answer as "obstruction of coronary artery" was coded as one and wrong answers as "malfunction of heart", "valvular disease" or "don't know" were coded as zero.

Questions about risk factors, were asked as close-ended questions with answers of "yes", "no" and "don't know" coded as one, zero and two respectively. The right answers with score one were summed to give the total score of awareness, with a possible range from 0-26, and higher scores indicating greater awareness. Participants' scores equal or less than 40% of the maximum score were regarded as "poor awareness level" scores between 41% - 60% of the maximum score were regarded as "moderate awareness level" and scores more than 60% of the maximum score were regarded as "good awareness level".

Statistical analysis:

The collected data was entered to Microsoft Excel sheet and data cleaning was performed before analysis. The data was analyzed using SPSS version 17.0 software program. Means and standard deviations were calculated for continuous variables as age and awareness scores, frequencies were calculated for categorical variables and chi-square test was used to find association between awareness scores and other variables. P-value of < 0.05 was regarded as statistically significant.

Results

Table (1) shows socio-demographic characteristics of the participants in which among 923 subjects, 462 (50.1%) were females. The age of participants ranged from 18 to 82 years(not tabulated) with mean age of 33 ±12 years. About 213 (23.1%) of the participants had literacy level of institute, university or higher. 170 (18.4%) were illiterate and only 117(12.7%) could read and write. The residency of majority of participants were city center and only 35 (3.8%) of all subjects were living in villages.

Table (1): Socio-demographic characteristics of the participants

Socio-demographic variable	Frequency	Percentage
Gender		
Female	462	50.1
Male	461	49.9
Literacy level		
Illiterate	170	18.4
Can read and write	117	12.7
Primary school	132	14.3
Intermediate school	169	18.3
Secondary school	122	13.2
Institute, university or higher	213	23.1
Residency		
City center	745	80.7
District	69	7.5
Sub-district	74	8.0
Village	35	3.8

Table (2) shows that 23 (2.5%) of the participants had previous history of CHD, 32 (3.5%) of them had diabetes mellitus, 55 (6.0%) had hypertension, 62 (6.7%) had dyslipidaemia, 14 (1.5%) had history of other heart diseases other than CHD and 52 (5.6%) had history of other chronic diseases other than mentioned above. Regarding family history of CHD, 151 (16.4%) of the participants had first degree relatives with history of CHD, 77 (8.3%) had second degree relatives with CHD and 23 (2.5%)

had other member in the family other than first and second degree with history of CHD.

Table (2): Medical background of the participants

Medical background & lifestyle variable	Frequency	Percentage
Previously had CHD		
No	900	97.5
Yes	23	2.5
Diabetes mellitus		
No	891	96.5
Yes	32	3.5
Hypertension		
No	868	94.0
Yes	55	6.0
Dyslipidaemia		
No	861	93.3
Yes	62	6.7
Other heart diseases		
No	909	98.5
Yes	14	1.5
Other chronic diseases		
No	871	94.4
Yes	52	5.6
Family history of CHD		
No	672	72.8
First degree relative	151	16.4
Second degree relative	77	8.3
Other member in the family	23	2.5

Figure (1) shows that 45.07% of the participants had moderate awareness level, 44.42% had good awareness and only 10.51% had poor awareness level.

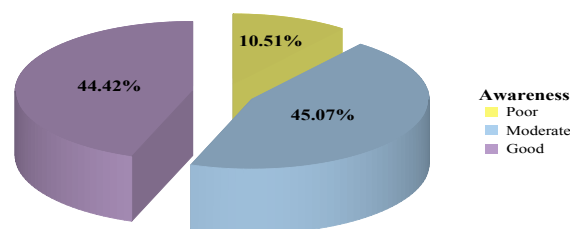


Fig1:Participants' awareness levels

Table (3) shows participants' answers regarding questions asked on various aspects of CHD. 390 (42.3%) of the subjects knew that CHD is an arterial blockage. Majority of the subjects, namely 797 (86.3%), answered correctly that CHD can be prevented. Regarding risk factors, majority of the subjects, 816 (88.4%), were aware that smoking is a risk factor for CHD. Most of the respondents knew that obesity is a risk factor. About two-third of the respondents, 677 (73.3%), were aware that high blood cholesterol increases risk of CHD. 747 (80.9%) of all the participants correctly answered that sedentary life style increases CHD risk. About half of the subjects answered correctly that age is a risk factor for CHD. About 679 (73.6%) were aware that high blood pressure increases CHD risk, while only 354 (38.4%) were aware that diabetes increases risk, 721 (78.1%) knew that stress increases risk. Only 359 (38.9%) of the subjects correctly answered that family history is a risk factor for CHD. About 257 (27.8%) knew that oral contraceptives increase CHD risk.

Table (3): Frequency distribution of knowledge on various aspects of CHD among participants.

Question	Response count	Percentage
What is CHD		
Arterial blockage	390	42.3
Malfunction of heart	45	4.9
Valve problem	14	1.5
Don't know	474	51.4

CHD can be prevented	28	3.0
No	797	86.3
Yes	98	10.6
Don't know		
Smoking increases risk of CHD	25	2.7
No	816	88.4
Yes	82	8.9
Don't know		
Obesity increases risk of CHD	18	2.0
No	793	85.9
Yes	112	12.1
Don't know		
High blood cholesterol increases risk	23	2.5
No	677	73.3
Yes	223	24.2
Don't know		
Sedentariness increases risk	42	4.6
No	747	80.9
Yes	134	14.5
Don't know		
Age is a risk factor	235	25.5
No	478	51.8
Yes	210	22.8
Don't know		
High blood pressure increases risk	45	4.9
No	679	73.6
Yes	199	21.6
Don't know		
Salty diet increases risk of CHD	83	9.0
No	655	71.0
Yes	185	20.0
Don't know		
Diabetes increases risk	155	16.8
No	354	38.4
Yes	414	44.9
Don't know		
Stress increases risk	42	4.6
No	721	78.1
Yes	160	17.3
Don't know		
Family history is a risk factor	292	31.6
No	359	38.9
Yes	272	29.5
Don't know		
Oral contraceptive increases risk of CHD	96	10.4
No	257	27.8
Yes	570	61.8
Don't know		

Table (4) shows CHD awareness mean scores for participants' socio-demographic characteristics. There was The age of participants ranged from 18 to 82 years with mean age of 33 ±12 years , no significant difference between males and females regarding awareness score. Higher awareness scores were found among illiterates, (p value < 0.05).

Table (4): Relation of socio-demographic characteristics to CHD awareness mean score

Socio-demographic variable	Awareness mean*	SD**	P. value
Gender			
Female	15.77	4.93	NS
Male	15.50	4.54	
Literacy level			
Illiterate	17.35	4.54	<0.05
Can read and write	15.68	4.51	
Primary school	14.22	5.60	
Intermediate school	14.83	5.02	
Secondary school	15.21	4.01	
Institute, university or higher	15.10	4.15	

Residency			
City center	15.75	4.79	NS
District	15.32	4.81	
Sub-district	15.19	4.47	
Village	14.69	4.14	

*Maximum awareness score= 26

** SD: Standard Deviation

Table (5) : shows mean CHD awareness scores were significantly higher among those with previous history of CHD, diabetes mellitus, hypertension, dyslipidaemia, history of other heart diseases and presence of CHD in other member in the family (p value < 0.05). However; there was no significant association between CHD awareness scores and history of other chronic diseases.

Table (5): Relation of medical background to CHD awareness mean score

Medical background	Awareness mean*	SD	P. value
Previously had CHD			
No	15.56	4.73	<0.05
Yes	18.74	3.90	
Diabetes mellitus			
No	15.52	4.74	<0.05
Yes	18.75	3.51	
Hypertension			
No	15.50	4.70	<0.05
Yes	17.75	4.87	
Dyslipidaemia			
No	15.47	4.74	<0.05
Yes	17.94	4.20	
Other heart diseases			
No	15.60	4.74	<0.05
Yes	18.21	4.00	
Other chronic diseases			
No	15.58	4.72	NS
Yes	16.56	4.10	
Family history of CHD			
No	15.06	4.71	<0.05
First degree relative	17.58	4.13	
Second degree relative	16.22	5.11	
Other member in the family	17.78	4.19	

*Maximum awareness score= 26

Discussion

In this study the overall level of awareness of the participants is accepted with 45.07% of moderate awareness level and 44.42% of good awareness level, this finding is lower than the result of a study done in Iran ^[16] where most of the participants had good knowledge (87.8%) and a study done among American Indians ^[17] showed overall high awareness to heart disease risk factors ranging from 71% to 90%, whereas this result was found to be higher than the results of studies done among women in the US as majority reported that they were not well informed about heart disease and did not know major risk factors for it ^{[18], [19]}. It is also higher than a survey conducted in Ga-Rankuwa community ^[12] which reported low level of awareness. This discrepancy could be due to the use of different methods to assess the awareness level, as in the present study close-ended questions were used to assess the level of awareness while in others open-ended questions were used, or due to variations in the study samples or their education.

Knowledge was significantly associated with literacy level; strangely higher knowledge scores found among illiterates, this finding can be justified by the explanation that majority of illiterate participants were of middle and old ages associated with medical conditions like hypertension or diabetes mellitus or others that made them more aware than younger ages and others without medical conditions and were of frequent visits to health centers. Or this finding could be due to reporting bias, as the illiterate participants filled the questionnaire by interview and there was possibility of tendency to answer questions

by “yes”, although efforts had been done to avoid this and the participants were asked the same question in different ways to ensure the answer whenever possibility of reporting bias was observed. About half of the respondents (51.4%) did not know what the CHD is and only 42.3% correctly answered that it is arterial blockage, although this result is higher than that in Pakistan^[11] which showed that only 14% of the respondents knew that it is an arterial blockage. Majority of the respondents answered that CHD can be prevented, this is somewhat in agreement with the study done in Pakistan^[11] which showed 74.3% of the respondents answered that CHD can be prevented, it is also in agreement with a survey conducted among university students in Karachi in Pakistan^[20] which showed that 85% thought it is preventable. Awareness of risk factors was generally good except for few factors in which the correct answers were less than half including diabetes mellitus, family history and oral contraceptives in comparison to other factors which were more commonly identified by the participants as CHD risk factors including smoking, obesity, high blood pressure, lack of exercise, high blood cholesterol, stress and diet. This could be due to over representation of latter factors in mass media. This finding is in contrast to a community survey done in Karachi in Pakistan which showed low awareness regarding CHD risk factors despite the high literacy level of the participants.^[21] Awareness toward smoking, obesity and sedentariness was relatively high among the studied participants; probably due to increased prevalence of these factors among population in recent decades and this is in agreement with the study done in Saudi Arabia.^[22] Hypercholesterolemia was commonly identified by the participants as CHD risk factor (73.3%), this is in agreement with a survey done among patients undergoing elective CABG at an institution in a European country^[23] as hypercholesterolemia was identified by more than half of the participants. About half of the participants identified age as a risk factor, some of the participants did not think that age is related to CHD due to increased prevalence of the disease among younger ages, age was also identified less frequently (5%) as a risk factor in a survey in the US.^[18] Few numbers of the participants (38.4%) identified diabetes mellitus as a risk factor, this could be due to under representation of the disease as CHD risk factor in media, and this is in agreement with studies conducted in a European country^[23], Ga-Rankuwa^[12] and America^[19] in which diabetes mellitus was identified relatively less frequently. Stress was identified by

most of the participants as CHD risk factors and this is in agreement with surveys done among patient attendants in Pakistan^[11], a community survey in Pakistan^[21], in Ga-Rankuwa community^[12] and a survey conducted among South Asians^[24] as stress mentioned most frequently by the participants as an important cause for CHD, while this finding is in contrast to a survey in the US^[19] as stress was cited by only 18% of the participants. Family history of CHD was identified as a risk factor by less than half of the participants (38.9 %), this is in agreement with surveys in the US^[18], Ga-Rankuwa^[12] and a European country^[23], but in contrast it was more readily recalled by the participants with sedentariness as risk factor than other factors in a survey done among disadvantaged inner-city population.^[6] Regardless of illiterates, awareness scores were positively correlated with literacy level as higher scores found with higher literacy levels, and this is in agreement with several surveys conducted in different countries^[6, 17, 11, 22, 25, 1]. In the present study; no significant association was found between CHD awareness and gender, residency. Participants with positive medical backgrounds including previous history of CHD, hypertension, diabetes mellitus, dyslipidemia, other heart diseases and family history of CHD were positively correlated with better CHD knowledge; this could be explained by more exposure to healthcare providers’ advice and patients with positive medical status are health seeking people and motivated to get advice for better health. People with family history of CHD would be discussing the issues with their close family and friends. This finding is consistent with a study done in a European institution^[23] which showed that patients with multiple risk factors and those who had been symptomatic, positive family history, hypercholesterolemia, hypertension and diabetes mellitus were more aware of CHD risk factors. In an American Indian survey^[17], it was found that participants with hypertension and diabetes mellitus had significantly more knowledge than individuals without these conditions.

Conclusions:

The overall awareness level of the studied population is accepted, the respondents have good awareness regarding CHD risk factors. awareness level is significantly related to age, literacy level, and presence of medical conditions in the form of previous history of CHD, hypertension, diabetes mellitus, dyslipidemia, other heart diseases and family history of CHD. There is no significant association between awareness level and gender, residency.

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