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CARDIAC INPATIENTS' KNOWLEDGE ABOUT CORONARY ARTERY DISEASES

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Abstract
Objective: This study aimed to assess a patient's knowledge about coronary artery diseases and evaluate the associations between a patient's knowledge and their socio-demographic and clinical variables. Method: This was a cross sectional, single-center study design was carried out with 80 CAD patients at Iraqi center for heart diseases in Baghdad, study utilized a non - probability sampling (purpose sample). The following instruments were used to collect data: demographic, clinical data and the Coronary artery disease education questionnaire: A short version (CADE-Q SV). Results: the overall knowledge level is slightly less than moderate; their main score (9.562) (maximum possible score = 20). Conclusion: Our cardiac patients have inadequate knowledge about their disease and lifestyle management. Recommendation: Researchers recommended that interventional program should be implemented as curriculum uses in cardiac ward.
Keywords: Level of knowledge, coronary artery disease, cardiac inpatients

Introduction

The increasing incidence of chronic diseases has emerged as one of the most critical global health challenges of the twenty-first century, cardiovascular Disease (CVD) a chronic condition is the leading cause of mortality worldwide. (1) Coronary artery disease (CAD) is characterized by the accumulation of atherosclerotic plaque in the arteries of the heart this causes a cessation or reduction in blood flow to the heart muscle; and can range from unstable angina to myocardial infarction (MI). (2) According to the most recent World Health Organization (WHO) data published in 2020, CAD deaths in Iraq were 36,594, which represent 24.98% of total deaths. Iraq ranks 23rd in the world in terms of age adjusted death rate (227.26 per 100,000 populations). (3)

Patients with clinically established Atherosclerotic CVD are at very high risk of recurrent CVD episodes if risk factors are not managed. Thus, it is advised that all patients stop smoking, adopt a healthy lifestyle, and treat any risk factors. (4) The patients' knowledge about cardiac risk factors is crucial for the effective management of modifiable risk factors. (5) Therefore; in the context of preventive measures against coronary artery disease, assessing the knowledge level of patients is of vital importance to help them develop healthy lifestyle behaviors and contribute to the development of strategies for reducing both morbidity and mortality. (6)

Methods

Study design and participants

This was a cross sectional single-center study design has been used to assess a patient's knowledge about coronary artery disease. This study was carried out in (in-patient medical ward) at Iraqi center for heart disease in Baghdad, the study population consisted of all ages (aged 18+) involved in-patient setting those who had diagnosed a stable CAD patients and referred for elective angiography or PCI. Data was collected was conducted from 1th Juan to 5th Julia 2023. Non - probability sampling (purpose sample) used in this study, the sample of 80 patients.

Data collection instruments:

Three instruments are used to conduct this study; they are demographics form, clinical characteristics and the coronary artery disease education questionnaire: A short version (CADE-Q SV). (7) Basic socio demographic data comprised of (5) items including gender, age, education level, occupation, marital status. Clinical characteristics are comprised of (6) items which include: past medical history (hypertension and diabetic), family history of coronary artery disease, duration of chest pain, smoking and numbers of cigarettes \ day. Coronary artery disease education questionnaire: A short version (CADE-Q SV) used to assess knowledge of CAD and related factors. The CADE-Q SV consists of 20 questions that encompass five different domains, including medical condition, risk factors, exercise, nutrition, and psychosocial risk. Each area is represented by four questions. The patient can answer each of the questions (true / false / I don't know) each correct answer is valued one point, while the other two answers are valued zero, so the maximum score is 20 overall, a higher score indicates greater knowledge. The test-retest reliability was evaluated through the intraclass correlation coefficient (ICC) for each item. All domains were considered internally consistent (a > 0.7). The CADE-Q SV was demonstrated to have good reliability and validity. The translation and cultural adaptation were conducted initially. The procedure adhered to rigorous standards that were approved by the authors and was established upon the protocol recommended by Guillemin, Bombardier, and Beaton. (8)

Ethical considerations

Study approval has been requested through the College of Nursing / University of Baghdad. Then to the Ministry of Health (Department of Health Baghdad / medical city) Take patients' consent to participate in the research after explaining: purpose of the study; cause chosen; extend a search; privacy; emphasis on voluntary participation without force as well as the right of refusal.

Data Analysis:
SPSS Version 22.0 was used and descriptive statistics, independent t-test and one way ANOVA. the level of significance was set at 0.05 for all tests.

Results
Characteristics of participants
Results the (table .1.) showed there were 55(68.8%) was male. the mean age of patients in this study is (56. 98) years. Concerning age group, the majority 36 (45%) were equal and below age 55. The most common educational level is primary school graduate 29(36.3%). In relation to marital 73(91.2%) are married. Concerning occupation are most participants 23(28.8%) are self- employee.

Table (1): Demographic characteristic of Patients with CAD

Variables	Groups	(n=80) No (%)
Gender	Male	55 (68.8)
	Female	25 (31.2)
Age Groups	≤ 55	36 (45)
	56 – 65	27 (33.8)
	> 65	17 (21.2)
	$\bar{x} \mp S.D.$	56.987 ± 10.228
Education level	Read & write	7 (8.8)
	Primary school	29 (36.3)
	Intermediate school	7 (8.8)
	Secondary school	23 (28.8)
	Institute graduate	8 (10)
	University graduate	6 (7.5)
	Higher education	0 (0)
Marital status	Married	73 (91.2)
	Widowed	5 (6.3)
	Divorced	2 (2.5)
Occupation	Wife house	21 (26.3)
	Retired	17 (21.3)
	self- employee	23 (28.8)
	Employee	19 (23.8)

No= number of patients, %= Percentages, $\bar{x} \mp S.D$ = Mean ± Standard Deviation, > = more Than, ≤ = less than or equal.
Results the (table.2.) showed the clinical characteristics variables; most patients have hypertension, 62(77.5%). the participants had diabetes 30 (37.5%). Thirty six percent (36.3%) had family history of CAD. Regarding duration of symptoms, most patients 40(50%) having symptoms within the period between (1–6) month. Concerning smoking; the most common are non- smoking which are smoking 44(55%) are. Regarding the number of cigarettes per /day and number of 21(26.3%) smoke less than or equal 20 cigarettes in a day.

Table (2): Clinical Characteristics of Patients with CAD

Variables	Groups	(No=80) No (%)
Hypertension	Yes	62 (77.5)
	No	18 (22.5)
Diabetic	Yes	30 (37.5)
	No	50 (62.5)
family history of coronary artery disease	Yes	29 (36.3)
	No	51 (63.7)
Duration of symptoms before procedure (months)	≤ 6	40 (50)
	7–12	17 (21.3)
	>12	20 (25)
	Asymptomatic	3 (3.7)
Smoking	Yes	36 (45)
	No	44 (55)
Number of cigarettes (per day)	≤ 20	21 (26.3)
	21- 30	6 (7.5)
	≥ 31	9 (11.2)
	Total	36 (45)

No= number of patients, %= Percentages, > = more Than, ≤ = less than or equal, ≥ = more than or equal
Table .3. Shows patient's knowledge level; the overall knowledge level is slightly less from moderate; their main score (9.562) (maximum possible score = 20). Regarding to related domains; the medical-diagnosis domain with a mean of (**2.250**), the nutrition domain and the risk-factor domain at (**1.937**), and followed by the exercise domain with (**1.812**) and the psychological-factor domain, which got the lowest score at (**1.625**). (Maximum mean score every domain = 4)

Table (3): Patients' Knowledge Scores Obtained From Coronary Artery Disease Education Questionnaire (CADE-Q SV) (*n* = 80)

Domain	Maximum mean score	CADE. SV scores	
		M.S	SD
Medical condition	4	2.250	0.948
Risk factors	4	1.937	0.832
Exercise	4	1.812	0.858
Nutrition	4	1.937	0.890
Psychological risk	4	1.625	0.891
Overall Knowledge	20	9.562	2.036

M.S. =Mean of score, SD = Standard Deviation.
The findings of table (4) reveal there is no statistically significant differences were found between other sociodemographic and clinical factors and the overall the CADE-Q SV (p >0.05). Except there is significant differences were found between Patients' knowledge subscale (exercise) with scores in terms of hypertension (P = 0.006)

Table (5): Differences Between Participants Characteristics and Patients' knowledge

Overall knowledge and Main Domains	Gender		Age Groups		Education level	
	t	P value	F*	P value	F *	P value
Medical condition	0.190	0.850	0.382	0.860	1.346	0.266
Risk factors	0.451	0.653	0.502	0.774	0.022	0.995
Exercise	0.648	0.519	0.256	0.936	0.260	0.854
Nutrition	0.151	0.880	1.050	0.395	0.228	0.876
Psychological risk	0.370	0.712	0.342	0.886	0.849	0.472
Overall	0.228	0.820	0.231	0.948	0.773	0.513
Overall knowledge and Main Domains	**HT**		**DM**		**FH**	
	t	P value	*t*	P value	*t*	P value
Medical condition	0.988	0.326	0.121	0.904	0.672	0.503
Risk factors	0.280	0.780	0.587	0.559	1.173	0.244
Exercise	2.805	0.006**	0.907	0.367	0.151	0.880
Nutrition	1.244	0.217	1.005	0.318	0.049	0.961
Psychological risk	0.523	0.602	0.841	0.403	0.032	0.974
Overall	0.936	0.352	0.240	0.811	0.263	0.794

HT= hypertension, DM= diabetic mellitus, FH = family history, t = t test, p = p value, * one way ANOVA. ** = significant p > 0.05.

Discussion

When patients' knowledge about CAD and related domains is assessed; the overall knowledge level is slightly less from moderate; their main score (9.562) (maximum possible score = 20). Regarding to related domains; the highest knowledge domain was the medical-diagnosis domain with a mean of (**2.250**), followed by the nutrition domain and the risk-factor domain at (**1.937**), and followed by the exercise domain with (**1.812**) and the psychological-factor domain, which got the lowest score at (**1.625**). (Maximum mean score every domain = 4) (Table 3). However; the study able recognized areas of insufficient understanding including psychological, nutrition, risk factors, and exercise. With these results in together, healthcare providers can develop unique instructional program to fill patients' knowledge gaps in areas where they scored low, this findings are similar to other researches that assessed the level of CAD Knowledge; Tawalbeh, etal. [9] revealed that the mean level of knowledge in the pre-test was moderate and the highest knowledge domain was the medical-diagnosis domain. Furthermore; Negesa etal., [10] concluded slightly more than half of patients (54%) owned an adequate level of understanding regarding CV risk factors, whereas 46% showed less than optimal knowledge. Other study showed the (63%) of patients reported needing more education about nutrition, physical activity, medication use, or their psychological well-being. [11] Ranjbar, etal., [12] demonstrated an inadequate level of knowledge regarding CVDs, to enhance the knowledge of these patients regarding CVDs, therefore, suitable training programmes are recommended, furthermore, the research outcomes established an efficient and core framework for future research in this field. Also, study was found that patients with CADs had moderate cardiac risk factor management knowledge, knowledge of cardiac diets, stress management, and medication was slightly higher than cardiac symptoms, exercise, and depression risk. [5] In Iraq; study conduct to assess of nurses' practices concerning nursing interventions for patients with CAD indicated that the practices score of nursing staff was inadequate. [13] Furthermore; study showed general knowledge toward healthy lifestyle in patients with CAD which is assessed by CADE-Q were poor. [14] Other study done in three major hospitals in Iraq about heart failure indicated that patient had inadequate self-care levels and knowledge deficits. [15] The researcher confirmed of this study when qualify for study participation, the majority of participants have not previously had CAD or had a long time ago; therefore they may not have knowledge of the CAD and related risk factors, primary care screening is based on that. It is likely a healthcare practitioner is not discussed the effects CAD risk factors with their. National campaigns is few, along with not present routine wellness visits to healthcare providers focus largely on the major CAD risk categories of diet, exercise, and obesity, risk factors, psychological status. This explains why the patients in this study were less knowledgeable about CAD and their risk factors.

Regarding to evaluate the differences between a patient's knowledge and their socio-demographic and clinical variables; there is a non-significant association between patient's knowledge with other demographic or clinical variables. Regarding patient's knowledge subscale; there is significant association are found between patients' knowledge subscale (exercise) with scores in terms of hypertension (p= 0.006). Al Jumaily, [16] it show no significant differences between Patient's knowledge and age, marital, and smoking. Other study a quasi-experimental design it although show non significant differences between no Patient's knowledge with demographic or clinical variables P>0.05 for both groups. [17][18][19][20][21][22] Variables such as Age, Gender, marital status, religion, education, occupation, type of family, family history of HT and DM, history of smoking/alcohol, type of diet indicates that the demographic variables and post- test knowledge score of CAD patients does not have significant association and were independent of each other. [23] These results confirm the level of knowledge about coronary artery disease does not differences based on demographic and clinical variables, therefore should

be provision of an educational intervention to all patients regardless of their gender, age, educational level, or having risk factors.

Limitations of the Study:
Several limitations were present in the present study. To start with, this sample was not randomized. Second, this research was carried out in a solitary medical ward at an Iraqi heart disease center in Baghdad.

Conclusions
The study recommended that interventional program should be implemented as curriculum uses in cardiac ward. Nurses should play role to provide education to patients and assess patients' knowledge about CAD. Post-hospitalization outcomes should be researched to determine the impact of patients' knowledge on their adherence to a healthy lifestyle after they have returned home.

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