Original Article

Assessment of Cardiovascular Diseases Knowledge among Adults Population in Sulaimani City: A Descriptive Study

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Abstract

Background: The increasing prevalence of cardiovascular disease has emerged as a significant global and public health issue within the category of non-communicable diseases. In this study, we have to assess cardiovascular diseases knowledge and risk factors among adult population in Sulaimani City.

Materials and Methods: A descriptive study was done with 131 people in Sulaimani city was collected the data includes socio demographic, clinical characteristics, and information about some risk factors of cardiovascular disease through direct interview.

Results: The results of the present study revealed that 60.3%, 39.7% of the participants were males and female respectively. Most of them married and from urban area, 35.9% was graduated from primary school. 51.9% of them were unemployed. 76.3% of them had insufficient economic state. 81% of them were current and second-hand smoke. More than half of them had no information about heart disease, it is risk factors. Most 80.2% of them did not do regular exercise

Conclusion: From this present study, we have concluded that insufficient knowledge of the participants regarding risk factors of heart disease, especially food drug interaction and drug- drug interaction. More than half and nearly a quarter of them did not sure about existing dyslipidemia and hypertension respectively. The majority of them did not perform regular daily exercise.

Keywords: cardiovascular diseases, knowledge, adults, population, Sulaimani city, descriptive study

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Introduction

According to the European Society of Cardiology (ESC) coronary artery disease (CAD) is defined as an episode of a reversible condition between the nutrient needs of the cardiac muscle and its demand that is associated with ischemia or hypoxia. Stable coronary artery disease (CAD), often asymptomatic phase of the disease after having an acute coronary syndrome (ACS). [1] Cardio Vascular Diseases (CVDs) encompass conditions such as coronary heart disease (CHD), cerebrovascular disease, peripheral arterial disease, rheumatic heart disease, congenital heart disease, deep vein thrombosis, and pulmonary embolism. [2] cardiovascular diseases stand as the leading global cause of mortality, contributing to 31.0% of all recorded deaths. [3]

A significant proportion of extrinsic risk factors for CVD such as cigarette smoking, unhealthy diet, and physical inactivity are preventable, the incidence of CVDs continues to increase because of inadequate prevention measures. [4] coronary heart disease (CHD) ranks as the third most prevalent cause of mortality in hospital settings, following road traffic accidents and senility. [5] The transition from physically demanding to sedentary jobs due to economic industrialization, coupled with the contemporary culture of consumerism and technology-driven lifestyles, characterized by extended work hours, lengthy commutes, and reduced leisure time for recreational activities, could account for the notable and consistent rise in CVD rates in recent decades. Notably, factors such as physical inactivity, consumption of a high-calorie diet rich in saturated fats and sugars, are linked to the onset of atherosclerosis and other metabolic issues, including metabolic syndrome, diabetes mellitus, and hypertension, which are highly prevalent among individuals with CVD. [6]

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In a comprehensive study involving participants from 52 countries, spanning various income levels, it was found that nine modifiable risk factors contribute to 90% of the risk associated with experiencing a first myocardial infarction (MI). These factors include smoking, dyslipidemia, hypertension, diabetes, abdominal obesity, psychosocial factors, inadequate consumption of fruits and vegetables, consistent alcohol intake, and physical inactivity. Notably, smoking alone accounted for 36% of the population-attributable risk of MI in this study. [7] Atherosclerosis is the pathological artery and aorta process potentially causing disease due to reduced blood flow from vessel stenosis. [8] It involves dyslipidemia, immunologic phenomena, inflammation, and endothelial dysfunction. These factors trigger fatty streak formation, a hallmark in atherosclerotic plaque development, starting as early as childhood. The process includes intimal thickening, lipid-laden macrophage accumulation, and smooth muscle cell proliferation forming the atheroma plaque. As lesions expand, deep layer apoptosis occurs, leading to calcification and transition to atherosclerotic plaques. [6]

Efforts should focus on primary prevention through adopting a healthy lifestyle and an appropriate diet from an early age. The aim is to delay or prevent the onset of atherosclerosis, reducing the future risk of cardiovascular disease. The AHA introduced the concept of "ideal cardiovascular health," characterized by the presence of: Ideal health factors include untreated total cholesterol below 200 mg/dL, untreated blood pressure below 120/80 mm Hg, and fasting blood glucose below 100 mg/dL The objective is to enhance the health of all Americans, anticipating a 20% reduction in deaths from CVD. Special emphasis is crucial for individuals at elevated risk for CVD, such as those with diabetes, hypertension, hyperlipidemia, smokers, and obesity. It is highly important to modify risk factors by managing medical conditions, abstaining from smoking, implementing weight loss measures, and maintaining an active lifestyle. [9]

Key risk factors for CHD include hypertension, hypercholesterolemia, diabetes, overweight/obesity, and smoking. A previous study revealed that individuals with a heightened awareness and perception of CHD tended to be those who had personal experiences with heart attack victims, received health professional education about symptoms, or harbored concerns about experiencing a heart attack. This study aims to explore the relationship between demographic characteristics and variations in knowledge, awareness, and perception of both risk factors and symptoms of CHD among residents. [10] The strong predictors of heart attack were included: sedentary lifestyle, high body mass index, positive family history, unhealthy diet, smoking cigarettes, high blood pressure, dyslipidemia, and Diabetes Mellitus, according to a study done in Sulaimani city of Iraq. [11]

Materials and Methods

Study Design, Setting and Period

The present descriptive study was conducted with 131 people in Sulaimani city to assess cardiovascular diseases knowledge and risk factors among adult population during the period of 25th December 2023 to 28th February 2024.

Study Population

The study was approved from general places in Sulaimani city such as on the streets and inside the super markets.

Sampling Method

In our present, we have selected and included of 131 patients by using simple random sampling method.

Study Tool

For the purpose of data collection, the study tool was constructed and based on extensive review of related literature and studies to assess cardiovascular diseases knowledge and risk factors among adult population. The study tool is composed of two parts which were distributed through the followings: **Part-1:** Socio Demographic and clinical characteristics of the study. This part consists of age, gender, marital status, monthly income, occupation, level of educational, residential area, smoking cigarette. **Part-2:** Some items regarding participant's information and source of the information such as patient's knowledge regarding cardiovascular disease, risk factors, healthy food that prevent heart disease, food-drug interaction and drug- drug interaction. **Part-3:** Participant's regular physical activity and healthy dietary pattern such as fish, fruit and vegetable.

Inclusion Criteria

Both adult genders, males and female's people with aged ≥ 18 years who were accepted participation in this study.

Exclusion Criteria

People who were refused to be interviewed or willing to participate in this present study.

Validity

The content validity of the tool was determined through a panel of 5 experts in various field of science (Nursing, and Medicine) to investigate the clarity, relevancy and adequacy of the items of the tool. Experts were provided the instrument by their opinions about the suitability of the items included in the form. The majority of the experts agreed upon the items of the study with some comments and suggestions. In addition, the experts' suggestions have been taken into consideration. So far, the modifications are employed and the final copy of the instrument is completed and become valid to be an appropriate tool for data collection.

Pilot Study

A pilot study was conducted on 15 male and female persons during the period of 10th January to the 20th of January 2024.

Reliability

Reliability was conducted by the application of internal consistency reliability with the help of split-half method, which was conducted at general people from 15 general persons in Sulaimani city. The reliability coefficient of our current study was r = 0.80 for some information and risk factors of heart.

Rating and Scoring

The items were rated and scored according to the following patterns: The three points types Likert scale Yes, No and I do not know is scored as (2) for Yes, (1) for I do not know and (0) for No. The two points Semantic scale Yes and No (2) for Yes, and (0) for No.

Methods of data collection

The data were collected through the utilization of adopted and constructed tool, interview technique. The data collection process was performed from the period of 25th January up to 25th of February 2024. Interviewing by the use of the questionnaire for demographic data and knowledge took about 5 minutes for each person. Thirty persons were dropped out from the study sample because they refused participate in the study, for this reason the total study sample remaining only 131 persons.

Statistical Analysis

The data were organized and coded into computer files, by using the Statistical Package for Social Science SPSS 26.0 version. Categorical data was presented as frequency and proportions and continuous data was expressed as mean and standard deviation. Inferential statistical data analysis. Such analysis was performed through the application of the following procedure: Cronbach Alpha Correlation Coefficient was employed for the determination of the instrument reliability.

Ethical Clearance and Statement

We obtained the scientific research committee and Institutional Ethical committee approval was obtained before conducted this study. We didn't get any financial aid from any source. We didn't give any money to the study participants.

Results

The present descriptive study was conducted with 131 people in Sulaimani city to assess cardiovascular diseases knowledge and risk factors among adult population. The highest proportion of age-group was between 24–35 years which consist 45.8% and after that 26.7% of them were between 36–47 years. Most of 60.3% were males and 39.7% were female. Majority 91.6% of them were married, 35.9% of them were graduated from primary school, while 13% were illiterate, 51.9% of them were unemployed and 48.1% were employed. Most 91.6% of them were from urban area, 77.63% had insufficient monthly income. 40.5% of them were current smoke, 40.5% were second hand smoke, while only 6.9% and 12.2% of them were ex-smoke and never smoke respectively as shown in **Table – 1.**

In our present study, 55.7%, 63.4%, 46.6% of the participant had no information about heart disease, it is risk factors and those foods that prevent heart disease. Source of information of 13.7% of them regarding information about heart disease was from other people and physician & nurses. Source of information of 16% of them regarding information about risk factors of heart disease was from social media. Source of information of 13.7% of them regarding information about heart disease was from other people and physician & nurses. Source of information of 19.8% of them regarding information about healthy food that prevent heart disease was from TV & Radio. While nobody had information about food- drug interaction and drug-drug interaction. as shown in **Table – 2**

Table–1 Distribution of socio and clinical demographic characteristics

Sl. No.	Variables	Classifications	n (%)
1.	Age (in years)	24 – 35	60 (45.8)
		36 – 47	35 (26.7)
		48 – 59	17 (13.0)
		60 – 71	19 (14.5)
2.	Gender	Male	79 (60.3)
		Female	52 (39.7)
3.	Marital Status	Single	11 (8.4)
		Married	120 (91.6)
4.	Educational Level	Illiterate	17(13)
		Read and write	11 (8.4)
		Primary school graduate	47 (35.9)
		Intermediate and high school	20 (15.3)
		Institute	11 (8.4)
		Collage & post graduate	25 (19.1)
5.	Occupation	Employed	63 (48.1)
		Unemployed	68(51.9)
6.	Residence	Urban	120 (91.6)
		Rural	11 (8.4)
7.	Monthly Income	Sufficient	15 (11.5)
		Barley sufficient	16 (12.2)
		Insufficient	100 (76.3)
8.	Which type of smoker are you?	Current smoke	53 (40.5)
		Second hand smoke	53(40.5)
		EX smoke	9 (6.9)
		Never smoke	16 (12.2)

More than half of the participants 62.6% of them had no past medical history of hypertension, 13% has this disease while 24.4% of them did not know they have it or no. Most 87.8% of them had no diabetic mellitus and 12.2% of them had this disease. 10.7% of them had dyslipidemia, 28.2% had no the disease while 61.1% of them did not sure about it as shown in **Table – 3.**

Table – 2 Some items regarding participant's information and source of the information

Sl. No.	Questions	No f (%)	Yes f (%)	If yes, Source of Information	n (%)
1.	Do you have any information about heart disease?	73 (55.7)	58 (44.3)	Other People	18 (13.7)
				Social media	11 (8.4)
				TV & Radio	11 (8.4)
				Physician & Nurse	18 (13.7)
2.	Do you have information about risk factors of heart disease?	83 (63.4)	48 (36.6)	Other People	14 (10.7)
				Social media	21 (16)
				TV & Radio	6 (4.6)
				Physician & Nurse	7 (5.3)
3.	Do you have any information about healthy food that prevent heart disease?	61 (46.6)	70 (53.4)	Other People	0 (0)
				Social media	24 (18.3)
				TV & Radio	26 (19.8)
				Physician & Nurse	20 (15.3)
4.	Do you have any information about food- drug interaction?	131 (100)	0	Other People	0
				Social media	0
				TV & Radio	0
				Physician & Nurse	0
5.	Do you have any information about drug- drug interaction?	131 (100)	0	Other People	0
				Social media	0
				TV & Radio	0
				Physician & Nurse	0

Table–3 Some risk factors of heart disease and responses

Sl. No.	Items	Yes f (%)	No f (%)	I don't know n (%)
1.	Do you have hypertension?	17 (13)	82 (62.6)	32 (24.4)
2.	Do you have DM?	16 (12.2)	115 (87.8)	0 (0)
3.	Do you have dyslipidemia?	14 (10.7)	37 (28.2)	80 (61.1)

Majority 80.2% of them did not experience regular exercise while only 19.8% did do that. While all participants responded that they did not eat fish two times weekly and they didn't healthy food daily like plenty of fruits and vegetables, foods low in saturated fat, cholesterol, salt, sugar and high in fiber as shown in **Table – 4.**

Table–4 Participant's physical activity and healthy dietary pattern

Sl. No.	Items	Yes f (%)	No f (%)
1.	Do you do regular exercise?	26 (19.8)	105 (80.2)
2.	Do you eat healthy food daily? (Plenty of fruits and vegetables, foods low in saturated fat, cholesterol, salt, sugar and high in fiber)	0 (0)	131 (100)
3.	Do you eat fish twice weekly?	0 (0)	131 (100)

Discussion

The current study showed that the highest proportion of age was between 24-35 years which consist 37.1% and after that 33.9% of them were between 36 – 47 years. Similar results was done by Jamaludin et al. [12] in which mentioned that the most proportion of their participants were between 18–39 years old. The current result also detected that more than half of them were male and less than half were female, but this outcome is opposite to the study of [12] because the male gender was higher than the female. Also, the results regarding age and level of education are parallel with study was done by Akter et al. [13]

Most participants in the current study were married, more than a quarter of them were graduated from primary school which is the most proportion of the sample, while less than a quarter were illiterate, this result is disagreed with the same study because there was nobody of them were illiterate, but secondary school was the high proportion of their study. More than half of the present study were unemployed and less than half were employed. Most of them were from urban area, 3/4th of them had insufficient monthly income, less than a quarter of the participants had barley sufficient while only eight percent of them had a sufficient income. The researcher returned this reason to deteriorate of the salary system in Kurdistan region of Iraq that affected each sector in this region. Nearly half of them were current smoke, 38.7% were second hand smoke, while only 6.4%, 14.6% of them were ex-smoke and never smoke respectively.

The present study demonstrated that more than half of the participants have no information about heart disease and those foods that prevent affecting it. However, only a few participants had information about its risk factors. This outcome is disagreed with the study done by Sharif et. al. [14] who mentioned that more than half of their participants had information about ischemic heart disease but agree in the source of their information because the highest proportion of their source of information was the physicians. There were no participants had any information about food-drug interaction and drug-drug interaction. These findings revealed that knowledge regarding cardiovascular diseases is inadequate with the existence of risk factors among the Kurdish population in Sulaimani city. This outcome is agreed with the study of [12, 15–16]; they reported a poor knowledge score of heart disease and risk factors. Some participants achieved their information from social media and other nonprofessional people, while a few of them obtained the information from physicians and nurses. The researcher returned this reason to inadequate information by health care professionals, especially nurses. Although nurses are considered the cornerstone of health because they spend the most time with patients, so she believed that healthcare professionals and organizations play an important role in enhancing public awareness of health promotion, regular screening, and lifestyle modifications. It is imperative to implement interventional studies to thoroughly examine the true extent of cardiovascular diseases and implement strategies to mitigate their impact.

Less than a quarter of the population had a past medical history of hypertension while a bit more than a quarter did not sure about existing this disease, as well as only less than a quarter of them had DM. Regarding dyslipidemia, more than half of them did not sure about the existence of the disease while, more than a quarter of them had dyslipidemia. The researcher holds the view that individuals with a history of specific medical conditions should have received comprehensive instructions, particularly concerning interactions between food and drugs, as well as interactions between different drugs together, particularly those that are incompatible and may lead to adverse effects. This emphasis is crucial for patients with dyslipidemia, who should be informed about the importance of avoiding the consumption of grapefruit and grapefruit juice when taking cholesterol-lowering medications [17] believed that healthcare professionals and organizations are essential in significantly amplifying public awareness concerning health promotion, regular screening, and lifestyle modifications. Besides that, hypertension, hypercholesterolemia, diabetes and smoking cigarette are considered as the most risk factors of coronary heart disease. [12]

Practicing daily physical activity and consuming a healthy food which are essential to promote human health. The finding of the present study illustrated that less than half of the participants were performed a regular exercise. Although the participants did not have much knowledge about heart disease, they were very poor at implementing this information. Nobody of the participants ate fish twice a week, they did not eat healthy foods such as daily plenty of fruits and vegetables, foods low in saturated fat, cholesterol, salt, sugar and high in fiber. These results come along with the study of Sharif et. al. [14], who indicated that nearly almost of their participants did not eat healthy food daily such as Plenty of fruits and vegetables, foods low in saturated fat, cholesterol, salt, sugar and high in fiber. The researcher believed that these participants had sufficient information about heart disease and it is risk factors but they did not practice their information in their daily life, which is the disaster. Because, the nurses should be instructing the people about these important issues.

Conclusion

From this present study, we have concluded that there was a general lack of awareness regarding interactions between food and drugs, as well as between different drugs themselves. Additionally, adherence to a healthy diet, consisting of plenty of fruits and vegetables, low-saturated fat, low-cholesterol, low-salt, low-sugar foods, and high-fiber options, along with the recommendation of consuming fish twice a week, was not common practice. A significant proportion, more than half of the participants were uncertain about these dietary guidelines. Similarly, a substantial portion, around a quarter and over half respectively, were unsure about their existing conditions of hypertension and dyslipidemia. Furthermore, the majority did not engage in regular daily exercise. So, the health care professionals have an important role for instructing the people about risks of heart disease.

Recommendations:

The study recommended explaining scientific healthy awareness from health care professionals on their account on social media because many people achieved their information from non-trustable sources in social media.

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Conflict of Interest:

The authors declared that they had no conflict of interest.

Authors' Contributions:

BOS, SAS – Study Design, conducted and manuscript writing; **BOS, SAS, AASK and BMR** – Data collection, analysis and manuscript writing; All authors have written the manuscript, verified and approved.

Here, **BOS**–Bayan Omar Sharif; **SAS–**Sarwar Arif Star**; AASK–**Azad Abdalla Saeed Khidr; **BMR–**Bashir Mohammed Rasul

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