

Tracing the Risk Factors of Heart Diseases at Al-Nasiriyah Heart Center in Iraq

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ABSTRACT

Background: Heart diseases are one of the major causes for death especially in developing countries across the world. According to WHO, the deaths due to heart diseases in Iraq has reached 18.50% of total death in 2017 and Iraq has been identified as 19th rank at the international level. In our study, the heart diseases are categorized as electrical, circulatory and structural diseases. **Method and Results:** A Cross-sectional study was conducted out in a center for heart diseases at Al-Nasiriyah city, Thi-Qar governorate, Iraq, from 1st April to 31st May 2018. The patients who were diagnosed with heart diseases in the center were administered with a self-structured questionnaire, which explore the risk factors of heart diseases among them. A total of 80 patients (48 male and 32 female) who responded to questionnaire were included. Those who did not respond to the questionnaire were excluded. More than half of the patients (57.5%) were aged \geq 60 and 37.5% of them were illiterate. About 65% of patients with circulatory heart diseases consumed red meat more than two times a week, however 81% of them consumed it rarely. Also, 40% of heart disease cases do not perform exercise daily. **Conclusion:** This study reveals that the risk of heart diseases increases with the factors such as increasing age, having fried food, avoiding fruits daily, eating red meat more than 2 times per week, physical inactivity and being a passive smoker.

Key words: Healthy diet, Heart diseases, Patients, Physical activity, Risk factors.

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Submission Date: 25-12-2018;

Revision Date: 14-02-2019;

Accepted Date: 11-03-2019.

DOI : 10.5530/jcdr.2019.1.6

INTRODUCTION

New trends have been emerging under the topic of heart diseases for decades. The growth of human beings can be characterized as the variation in association between a person and his living environment over the time expectancy. The growth initiates when zygote has been developed in uteri and proceeds throughout the life of a person. Several factors that can influence the healthy growth in heart diseases.¹ Heart diseases are considered as the major cause of mortality and morbidity. Physiologically, this is because, the heart as a sturdy organ is in charge of blood circulation and conveyance of oxygen and vital supplements throughout the body. Hence, it is so treated as the most vital organ for a human being and any defect in the heart can affect human life.² The mechanism of heart diseases consist of three categories, which are electrical, circulatory and structural diseases.³

Among heart diseases, coronary heart disease has been widely recognized as the most heart disease causing death on the planet.⁴ It occurs when the sign builds up in arteries of the heart, a status named 'Atherosclerosis'. As the sign develops, the arteries become tight and make the blood flow to the heart more difficult. When this blood flow becomes reduced or blocked, coronary heart disease will occur and the person will present with angina (Chest pain) or a heart attack, heart failure and arrhythmias.⁵ The sign in the arteries are made up from cholesterol, fat, calcium and other materials present in the blood.⁶ Factors contributing to the increase in risk of coronary heart disease include diabetes, hypertension, abnormal lipids, abdominal obesity, tobacco smoking, alcohol abuse, insufficient physical activity, psychological stress, general obesity and unhealthy diet.⁷ Modification of these risk factors helps in prevention of occurrence in coronary heart disease, also minimizing the clinical events and premature death in people confirming coronary heart disease as well as individual at high risk of cardiovascular diseases due to one or more risk factors.^{8,9} Apart from circulatory diseases of heart, there are some other electrical and structural diseases which affects human be-

ings. It is essential to reveal the risk factors for such kind of heart diseases observed among person with heart diseases. In this regard, this study aimed to assess the risk factors for electrical, circulatory and structural diseases observed in.

MATERIALS AND METHODS

Before commencing the study, an ethical approval has been taken from ethical committee of Al-Nasiriyah Heart Center and consent from each participant was taken before enrolling them in our study. A cross sectional study design was conducted at center for heart disease at Al-Nasiriyah city in Thi-Qar governorate. This center is a specialized center for diagnosis and treatment on referral system for heart diseases and cardiac surgery. The patients who are diagnosed with different types of heart diseases at Al-Nasiriyah center during the time period from 1st April to 31st May 2018 were administered with a self-structured questionnaire. This questionnaire was designed in such way to explore the risk factors of heart diseases among them. A total of 80 patients (48 male and 32 female) who responded to the questionnaire were included. Those who did not respond to the questionnaire were excluded. The questionnaire comprises of three parts, the first, demographic characteristics covered age, gender, residence, education, Body Mass Index (BMI) and occupation. Second, the patients' history deal with hypertension, diabetics, cholesterol, family history, smoking, passive smoker and obesity history. Third, food habits such as a fruit per day, eating red meat and fried foods; and personal activities such as exercise and long time on TV, NET, etc., were covered. There are many methods that are used to calculate the risk of Cardiovascular Diseases (CVDs), in which this study adapted the 'Heart UK - The Cholesterol charity' method that is suitable for the population of Iraq.¹⁰ Further, the BMI classification was taken based on World Health Organization (WHO).¹¹ To measure the socio economic status level in urban area, Kuppuswamy scale was considered.¹²

Statistical Analysis

The descriptive statistics was used to identify the characteristics of our study population. Chi-square test was done to find out the association between the selected variables. Data coding and analysis was done using Statistical Package for Social Science (SPSS) version 20.0. All statistical tests were applied at the level of significance of 5%.

RESULTS

The majority of patients (60%) were male and more than half of them (57.5%) were observed in between the age group of ≥ 60 . About 80% of patients were resident of urban areas. With respect to level of education, the distribution of patients was observed as illiterate (37.5%), secondary level (28.8%), university (21.2%) and primary (12.5%). According to BMI classification by WHO, the majority of patients (50%) were found as Normal (i.e., 18.5-24.9). The majority of patients (66%) were unemployed and only a few were working in private sector. The 95% CI identified there is no outlier in the study population (Table 1).

About 65% of patients were identified with hypertension. In this study, 45% of patients were known diabetic, but 55% of them were found with no diabetes. 56.3% of patients were identified with the history of elevation in cholesterol level. Regarding the patient's family history, 46.3% of patients presented with a family history of heart diseases. This study observed that Smokers were 56.3% were smokers and 43.7% were non-smokers. The majority of patients (78.75%) were observed as passive smokers. Lastly, the results of obesity history were observed unique. The 95% CI identified there is no outlier in the study population (Table 2).

In our study, 64.4% of patients with circulatory heart diseases never eat fruits daily, in addition 20.3% and 15.3% of patients with electrical and structural heart diseases respectively. Whereas, only a few percentage of patients had the habit of eating fruits twice or more per day. While comparing the three types of heart diseases, about 65% of patients who eat red meat more than 2 times a week usually were presented with circulatory diseases. 81% of patients who eat red meat more than 2 times a week rarely were presented with circulatory diseases. Consecutively, a low percentage of heart diseases was observed in those never ate red meat more than two time per week. While reviewing all three types of heart diseases, more than 50% of study population were found with the habit of eating fried food per week usually. Whereas, below 10% of study population was seen rarely eating fried food habits Chi-square results showed that there was no significant association between the food habits and heart diseases ($p>0.05$) (Table 3).

It is inferred that the more number of patients who never performed the exercise had circulatory heart diseases and the patients having electrical and structural diseases are merely equal in number. Likewise, the number of patients who rarely do the exercise were presented with circulatory diseases (13), electrical (2) and structural diseases (2). Moreover, 9 patients who usually do the exercises were found with circulatory diseases and the patients having electrical and structural diseases with such kind of exercise habits are equal in number. On other hand, 14 patients with circulatory diseases had the habit of doing exercise always and one patient had electrical diseases and three had structural diseases (Figure 1). Patients who always/usually/rarely spent long time setting on watching TV, NET, etc., without being active, the more number of patients were found with circulatory heart diseases, when compared to electrical and structural diseases. A very few numbers of patients who never spent time on TV, NET, etc., were having electrical and structural diseases (Figure 2).

Table 1: Distribution of Patients with Respect to Patient's Demographic Characteristics.

Variables	n (%)	95% C. I	
Age	≤ 14	1 (1.3)	0.0-3.8
	15-29	6 (7.5)	2.6-14.1
	30-44	4 (5.0)	1.3-10.3
	45-59	23 (28.7)	19.2-39.7
	≥ 60	46 (57.5)	44.9-67.9
Gender	Male	48 (60)	47.4-70.5
	Female	32 (40)	29.5-52.6
Residence	Urban	64 (80)	59.2-78.4
	Rural	16 (20)	11.6-30.8
Level of Education	Illiterate	30 (37.5)	26.9-47.4
	Primary	10 (12.5)	5.1-19.2
	Secondary	23 (28.8)	18.0-38.5
BMI	University	17 (21.2)	10.3-28.2
	< 18.5	12 (15)	7.7-23.1
	18.5-24.9	40 (50)	37.2-59.0
	25-29.9	18 (22.5)	14.1-32.1
Occupation	<30	10 (12.5)	6.4-20.5
	Government	10 (12.5)	3.8-17.9
	Private	3 (3.8)	0.0-9.0
	Free Work	14 (17.5)	10.3-26.9
	Unemployed	53 (66.2)	46.4-68.2

Table 2: Distribution of Patients with Respect to Patient's History.

Variables	n (%)	95% C. I	
Hypertension	Yes	52 (65)	50.6-72.4
	No	28 (35)	25.6-47.4
Diabetes	Yes	36 (45)	32.1-53.8
	No	44 (55)	42.2-63.9
Cholesterol	Yes	45 (56.3)	32.1-53.8
	No	35 (43.7)	31.2-57.9
Family history	Yes	37 (46.3)	34.6-56.4
	No	43 (53.7)	41.6-63.4
Smoking	Yes	45 (56.3)	43.-64.4
	No	35 (43.7)	32.1-53.8
Passive smoker	Yes	63 (78.75)	61.9-81.2
	No	17 (21.25)	12.8-32.1
Obesity history	Yes	40 (50)	38.5-61.5
	No	40 (50)	38.5-61.5

DISCUSSION

Heart diseases are considered as the major cause for death worldwide, placing a big economic encumbrance on public health systems and health in general. This study illustrates that the majority of cases were at the age group ≥ 60 which is (57.5%) from the total, this result indicates the similar study.⁹ About 60% from study population were male and 40% female. The level of education particularly in current awareness econo-

Table 3: Distribution of Patients with Respect to Food Habits.

Variables	Circulatory n (%)	Electrical n (%)	Structural n (%)	Chi-square	
fruits per day	Twice	3 (50)	1 (16.7)	2 (33.3)	.306
	One time	12 (80)	0 (0)	3 (20)	
	never	38 (64.4)	12 (20.3)	9 (15.3)	
Red meat more than 2 times a week	Always	11 (55)	6 (30)	3 (15)	.136
	Usually	13 (65)	5 (25)	2 (10)	
	Rarely	17 (81)	0 (0)	4 (19)	
	Never	12 (63.2)	2 (10.5)	5 (26.3)	
Fried food per week	Usually	29 (54.7)	8 (61.5)	9 (64.3)	.631
	Sometimes	18 (34)	5 (38.5)	3 (21.4)	
	Rarely	6 (11.3)	0 (0)	2 (14.3)	

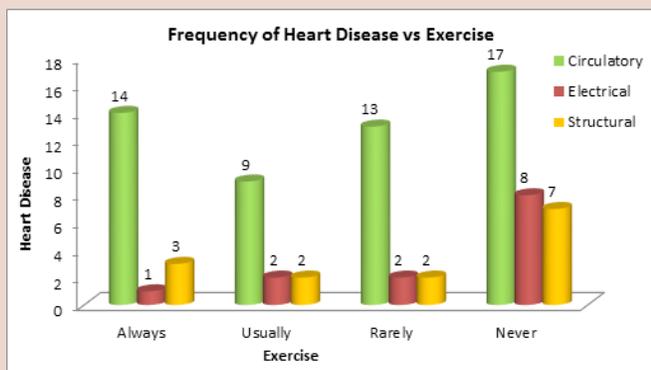


Figure 1: Frequency of Heart Disease vs Exercise.

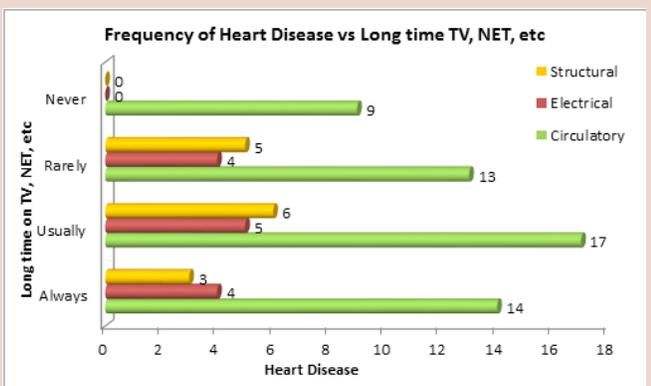


Figure 2: Frequency of Heart Disease vs Long Time TV, NET, etc.

my, have an upper hand in finding jobs and gaining employment. Higher education can give not only good salary and a satisfying job but also health benefits for the workers.^{13,14} Our study observed that most of the cases were under illiteracy explaining 37.5% from total sample followed by secondary level 28.8%, these findings are in consistent with the results of Patrick Mullie, *et al.*¹⁵ In today's business world, occupation showed 66.2% of patients are unemployed, followed by 17.5% do free work and 12.5%, government employer, 3.8% private respectively from our study.¹⁶

With respect to patients history, 65.5% are having hypertension, which is above the average.¹⁷ Moreover, 180 million people globally have diabetes, there is a chance of this number to be double in 2030 which was estimated by WHO. People with diabetes around 1.1 million have been dead in 2005.¹⁸ Our study showed that 45% of patients with diabetes and 55% without diabetes and also observed that 56.3% have history of elevation in cholesterol level.¹⁹ With regard to patients family history, 46.3% of study cases were with a family history of heart diseases. More than 7 million people every year have been dying through smoking/tobacco, especially smokers living in low- and middle-income countries are more than 1 billion which is 80% of the world's population.²⁰ In our results, 56.3% of patients with heart diseases were smokers and 78.75% were passive smokers.^{21,22}

The present study clarifies that 64% of patients who never eat fruits daily were observed with circulatory heart diseases; in addition to that 20.3% and 15.3% were found with electrical and structural diseases respectively. Whereas, a low percentage of study population who eat fruit two or more per day were identified with heart diseases, these results are in accord with Dauchet *et al.*²³ who found the increase intake of fruit and vegetables in the daily diet has shown a decrease in high blood pressure, which in-turn lowers the risk of heart disease. Also, our study elucidates the importance of daily exercise with the results showing more number of patients who never do the exercise were presented with heart diseases, when compared with the patients doing exercise rarely, usually and always.²³

CONCLUSION

Our present study reveals the risk of heart diseases increases as age increases, also with the factors such as eating fried food, do not eat fruit daily, eating red meat more than 2 times per week, physical inactivity and passive smokers. Therefore, this study identifies the above mentioned factors as the main risk factors for heart diseases.

Limitations

This study is only limited to the patients of a single heart center in Al-Nasiriyah city, Iraq. As a result, it may be difficult to generalize the findings of this study. Therefore, a further research should be warranted with a large sample size (i.e. large number of patients) across various medical centers in Iraq to better represent the Iraq population, which would aid to generalize the findings.

Recommendations

It is recommended to reduce the intake of fried foods and eat fruits at least twice a day. Mass educational programme for all population in general and especially for high-risk groups about importance of exercise and healthy diet to reduce incidence rate of heart diseases is advisable. It is advised to conduct a national level study to estimate the risk factors for heart diseases with a large population in Iraq.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ABBREVIATIONS

CI: Confidence Interval.

SUMMARY

This study aid the community with essential information by revealing the risk factors of heart diseases in Iraq.

REFERENCES

1. Kelley D. Heart Disease: Causes, Prevention and Current Research. JCCC Honors Journal. 2014;5(2):1.
2. Vlassis NP. Heart Disease and Congestive Heart Failure. Hellenic J Cardiol. 2009;50:231-4.
3. Jeroen PPS, Marieke WV, Arthur AM, Wilde. Mechanisms of inherited cardiac condition disease. European Society of Cardiology. 2005;7(2):122-37.
4. WHO. Atlas of Heart Disease and Stroke. 2004. Available at http://www.who.int/cardiovascular_diseases/resources/atlas/en/index.html
5. Edward N. An overview of cardiovascular disease and research. RAND Europe Cambridge. 2007.
6. National Heart, Lung and Blood Institute, Coronary Heart Disease, NIH Publication. 2009;09-7430.
7. Lovegrove JA. CVD risk in South Asians: the importance of defining adiposity and influence of dietary polyunsaturated fat. in Symposium on 'Nutrition interventions in high-risk groups'. Aberdeen Exhibition and Conference Centre, Aberdeen: Proceedings of the Nutrition Society. 2007;66(2):286-98.
8. WHO, Prevention of Cardiovascular Disease (Pocket Guidelines for Assessment and Management of Cardiovascular Risk). 2007.
9. Judith AF, Perviz A, Darrel PF. Mortality from ischemic heart disease by country, region and age: Statistics from World Health Organisation and United Nations. International Journal of Cardiology. 2013;168(2):934-45.
10. www.heartuk.org.uk
11. WHO | Obesity. Who.int. 2017 [cited 5 September 2017]. Available from: <http://www.who.int/topics/obesity/en/>
12. Singh T, Sharma S, Nagesh S. Socio-economic status scales updated for 2017. International Journal of Research in Medical Sciences. 2017;5(7):3264-7.
13. Freeman JD, Kadiyala S, Bell JF, *et al.* The causal effect of health insurance on utilization and outcomes in adults: A systematic review of U.S. studies. Med Care. 2008;46(10):1023-32.
14. Hadley J. Sicker and poorer-the consequences of being uninsured: a review of the research on the relationship between health insurance, medical care use, health, work and income. Med Care Res Rev. 2003;60(2):S3-75.
15. Patrick M, Peter C. Association between Cardiovascular Disease Risk Factor Knowledge and Lifestyle. Food and Nutrition Sciences. 2011;2(10):1048-53.
16. Pamuk E, *et al.* Socioeconomic Status and Health Chart book: Health, United States, 1998. (Hyattsville, Md.: National Center for Health Statistics). 1999.
17. Noeman A, Ahmad N, Azhar M. Coronary artery disease in young: faulty life style or heredofamilial or both. Annals. 2007;13(2):162-4.
18. <http://www.who.int/mediacentre/factsheets/fs312/en/index.html>
19. DeBakey ME, Gotto AM. The living heart in the 21st century. Amherst, N.Y.: Prometheus Books. 2012.
20. Sekhri T, Kanwar R, Wilfred R, Chugh P, Chhillar M, Aggarwal R, *et al.* Prevalence of risk factors for coronary artery disease in an urban Indian population. BMJ Open. 2014;4(12):005346.
21. Kenneth JM. The effects of smoking and drinking on cardiovascular disease and risk factors. Harvard Medical School, Boston, Massachusetts. 2006;29(3):199-203.
22. Jaakkola MS. Environmental tobacco smoke and health in the elderly. Eur Respir J. 2002;19(1):172-81.
23. Dauchet L, Amouyel P, Dallongeville J. Fruits, vegetables and coronary heart disease. Nature Reviews Cardiology. 2009;6(9):599-608.

Cite this article : Abd RK, Abd SN, Raman V. Tracing the Risk Factors of Heart Diseases at Al-Nasiriyah Heart Center in Iraq. J Cardiovascular Disease Res. 2019;10(1):31-4.