

العدد الرابع والعشرون - 25 يوليو (2017)

Pilot study of effect of obesity and life style on cardiovascular patients in Benghazi

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الملخص :

امراض القلب هو مصطلح يشير الي مجموعة مختلفة من الامراض التي تصيب القلب منها امراض القلب والاورعية الدموية اعتلال عضلة القلب مرض القلب الناتج عن ارتفاع ضغط الدم وقصور القلب ومعظمها ناتجة عن ارتفاع الكوليسترول وارتفاع ضغط الدم وشرب الكحول وعدم تناول الفاكهة والخضروات بشكل كافي وعدم ممارسة التمارين الرياضية

الهدف من هذه الدراسة معرفة تأثير السمنة ونمط الحياة مثل التدخين شرب الكحول والقهوة والشاي واخذ الادوية وممارسة الرياضة علي مرضي القلب .

هذه الدراسة كانت دراسه مبدئية اجريت علي مجموعه من مرضي القلب من الجنسين نساء ورجال تتراوح اعمارهم بين 18-70 سنة وعدد العينه كانت 100 عينه, هذه العينه اخدت من مستشفى الجماهيريه, مركز بنغازي الطبي, الهواري ومركز عناية القلب في مدينه بنغازي وذلك في الفتره من 1 يناير الي 12 فبراير 2011. البيانات جمعت من خلال استبيان يتضمن اسئلته عن حاله الاجتماعيه والاقتصادييه ونمط الحياه والقياسات الجسمانيه والغذاء . وتم تحليل البيانات بواسطه النظام الاحصائي (spss).

النتيجه:

لوحظ ان توجد علاقه قويه بين شرب الشاي والقهوه والاصابه بمرض القلب وكانت نسبه الارتباط (p=0.042, p=0.034) علي التوالي. كذلك توجد علاقه قويه بين زياده الوزن والاصابه بمرض القلب وكانت نتيجه الارتباط (p= 0.016). وايضا اثبتت الدراسه وجود علاقه بين اتباع نمط غذائي والاصابه بمرض القلب وكانت نتيجه الارتباط (p= 0.048). كذلك اثبتت الدراسه وجود علاقه بين عدم اكل الفاكهه والخضراوات بكميه كافيه والاصابه بمرض القلب وكانت نسبه الارتباط (p= 0.048).

الاستنتاج:

الدراسه تظهر ان هناك علاقه بين شرب الشاي والقهوه , السمنه وعدم اكل الفاكهه والخضراوات بكميه كافيه والاصابه بامراض القلب.

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Abstract:

It was a pilot study on cardiovascular patients among both sexes adult male and female. Carried out in hospitals (aljamheria, alhawari, benghazi medical center, heart center) in benghazi city, libya from 1st January to 12th february 2011.

In this study were carried out a random study on adults cardiovascular patients in libyan city of benghazi. A stratified random sample of 100 adults cardiovascular participants from male and female aged 18-70 yrs old selected from hospitals were enrolled for the study.

Participants were interviewed to fill up a detailed structured self administered Arabic language questionnaire designed to collect information related to select socio-economic characteristics, lifestyle information, anthropometric measurements and diet.

All data except for energy intake was coded prior to being entered in a computer and analyzed by SPSS (version 19). Level of significance was set at p value < 0.05 Descriptive Statistical and Chi Square test were used for statistical analysis of data.

This study found that there were a significant relation between drinking tea, coffee and chance to have cardiovascular diseases, from the result there were drinking tea represented (72.5%), (p=0.042) and drinking coffee (41.3%),(p=0.034) from total sample respectively. According to the result in this study, there were a significant relation between BMI and cardiovascular diseases. It reported that about 23.8% were pre-obese, 35% were obese and 1.3% were class I obese. In this study there were a significant relation between BMI and cardiovascular diseases (p=0.016).

Regarding to follow a special diet, the current study found that, 25% follow diet and 75% not follow diet. There were a significant relation between a special diet and cardiovascular diseases (p=0.048).

About eating fruit and vegetables was 8.85% eat fruit and vegetables and which is low eating of them which representative 78.8% from total sample. In this study, There were a significant relation with drinking water and cardiovascular diseases (p=0.048).

The result of current study found that, there were a significant relation between calories and heart diseases, they were consume 2000 kcal/day which represented 15% from the total sample and 1000-1500 kcal/day which represented 32.5% from the total subjects, but it refers to this diet nearly meet the daily needs according WHO, the reason is this group were hospitalized patients.

Introduction

Cardiovascular disease is a term that refers to more than one disease of the circulatory system including the heart and blood vessels, whether the blood vessels are affecting the lungs, the brain, kidneys or other parts of the body. Cardiovascular diseases covers a wide variety of disorders, including diseases of the muscles and the vascular system supply the heart, brain and other vital organs. The vast majority of CVD can be attributed to conventional risk factors. Even in Sub-Saharan Africa, high blood pressure, high cholesterol, extensive tobacco and alcohol use, and low vegetable and fruit consumption are already among the top risk factors for disease (1).

Population wide efforts now to reduce risk factors through multiple economic and educational policies and programs will reap saving later in medical and other direct costs as well as indirectly in terms improved quality of life and economic productivity (1,2).

Types of cardiovascular disease: 1.1

Ischemic heart disease

Is the most common type of cardiovascular disease in Canada, Middle East and other industrialized countries around the world. It is caused by narrowing of the coronary arteries and decreased blood supply to the heart. It refers to problems with circulation of blood to the heart muscle (2,3).

Cerebrovascular disease (stroke)

Refers to a problem with the circulation of blood in the blood vessels of the brain which were effect lasting less than 24 hours is referred to as a transient ischemic attack (1,3).

Peripheral vascular disease:

Affects the circulation primarily in the legs, patients with this disease typically complain of pain in their calves especially when walking (3).

Heart failure

Occurs when the pumping action of the heart cannot provide enough blood to the rest of the body as it needed, this can happen as a result of damage to the heart muscle, for example from a heart muscle attack or from excessive consumption of alcohol (3).

Rheumatic heart disease

This disease begins with a bacterial infection in childhood, affecting joints and heart valves, other infections can occur attacking the inner tissues of the heart valves (1,3).

Congenital heart disease

Is a problem with the structure of the heart arising because of a birth defect, these defects can be as simple as a small hole in one of the inside walls of the heart or they can be very complex affecting the way blood flows through the heart and lungs (1,3).

1.2 Causes of CVD

Due to the extensive range of illnesses, the specific causes will depend largely on particular disease, for some types of CVD are unknown and others related to rupture of blood pressure, genetic defects and others related dietary life style and lacking of exercise (3,4).

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1.3 Risk factors of heart diseases

The age, sex , heredity were the most risk factors that can not be changed.

Tobacco smoke, high blood chosterol, high blood pressure, physical activity, dibetes, obesity and overweight, drinking too much alcohol and unhealthy diet were the most modify risk factors (7,8,9,10,11,12).

The latest research of the American bioloists have determined that cigratte smoke also influences the process of cell division in the cardiac muscle and changes the hearts shape (9,10).

Along-term longitudinal studies indicate the obesity this relation appears to exist for both men and women with increases BMI more than 25 had a 50% increase risk nonfatal or fatal coronary heart diseases. People who have more excess body fat, especially if a lot at the waist are more likely to develope heart disease and stroke (26).

Aim and objectives

1-To study the role of obesity and life style including (smoking, dinking alcoholic beverages, coffee, tea, taking medication, exercise) on cardiovascular patients.

2-To identify those critical impacts which lead to cardiovascular disease in cardiovascular patients.

Subjects and method of the study

3.Subjects of methods

3.1-Subjects

3.1.1- Study population and design:

This study was a piolte study on cardiovascular patients among both sexes (adult males and females). Carried out in Aljumhoryia Benghazi medical center, Alhawary heart center and 7-october hospital in Bebhazi city, Libya during 1st January to 12th February 2011.

This study was selected from these medical centers because the most of the patients information were obtained from the participants by giving them a questionnaire to be returned. To minimize bais the questionnaire was translated into Arabic. They was completed it at the same day. Subjectects, responses were kept confidential, only a code number was written on the questionnaire. Their participitions were entirely volentary. They could withdraw at any time and they could refuse to answer any questions.

3.1.2-Sampling size

This study was designed to fill about 300 qesrtionnaire but due to there is no enough time , they fill 150 questionnaire.

3.1.3-Sample selection:

This study study was random sample of 150 cardiovascular patients. This study was 70 female and 80 malesrespond. The majorityof responds were 53.8% were females and 57% of males and all of them were cardiovascular patients.

3.2-Methadology:

3.2.1-The main questionnaire:

The main questionnaire was prepared for collecting information from the subjects about selected socio-economic characteristics, lifestyle, anthropometric measurements and dietary information including 24 hrs recall method.

Apiolt study of local hospitals to know of the method, number of questions and interval of the questionnaire and how of the patients participants in the study, the questionnaire was filled by interview with the patients in the local cardiovascular hospitals.

3.2.2-Administration of the questionnaire:

The questionnaire were filled from the cardiovascular patients who were in the hospitals after obtaining permission from hospitals authorities.

3.2.3-Questionnaire design and data collection:

The independent variables were, age, gender, marital status, education level, past medical history of the patients.

The dependent variables were lifestyle, obesity, nutritional status, anthropometric measurements. The cardiovascular patients were briefed about the purpose of our study and were explained about manner in which the questionnaire was to be filled up. Incomplete or unclear questionnaire were excluded from the study.

3.2.4-Questionnaire content:

It was decided to divide this questionnaire into three sections by using a multiple choice format. The first section was about socio-economic characteristics (it composed twelve questions, was asked about name, age, gender, address, education, marital status, family size, occupation at present, past medical history), the second section was about lifestyle (it asked about smoking, taking alcohol, drinking tea, coffee, taking drugs and physical activity) and the third section was about dietary information and anthropometric measurements (it was measured weight, height to calculate BMI).

Dietary history including special diet, drinking adequate amount of water, eating fruit and vegetables, added salts and using supplements.

The energy calculation by using 24-hr recall method which, designed to ask each patient to fill out a structured questionnaire to provide detailed information about meals eaten for previous 24-hr period.

3.2.5-Statistical analysis:

All data was coded prior to being entered in computer. Description and analysis of data was done by SPSS version 19. Level of significance was set up value <0.05 .

1-Descriptive statistics, frequency (number, percent, arithmetic mean and standard deviation).

2-Chi-Square was used to test the association between 2 qualitative variables.

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Results

Figure (1) demonstrate the family medical history of the subjects which including (2.5%) obesity, (11.3%) Diabetes, (3%) hypertension (3%) heart diseases and and more than (76.3%) had obesity and hypertension.

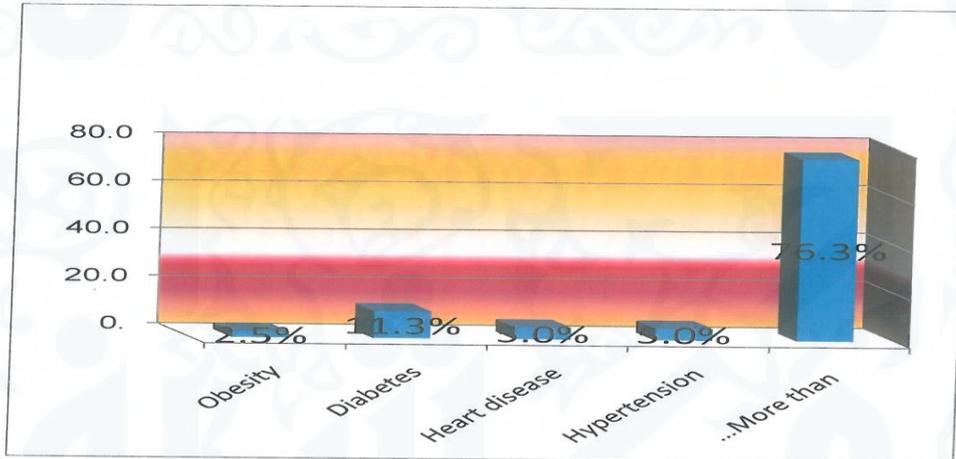


Figure (1) distribution of subjects according to family history.

The distribution of the patients according to lifestyle it was about (27.5%) smokers and (71.32%) non smokers fig(3). About (3.8%) were drinking alcohols and (96.32%) were non alcoholic fig (2). It also showed that (27.5%) were not drink tea and (72.5%) were drink tea fig (4 &5) and subjects who were drink coffee (58.8%) and who were not drink coffee (41.3%). It also showed that the participants who were take druges(91.32%) andThe percentage of the patients who were doing exercise (37.55%) and who were not doing exercise (60.0%).

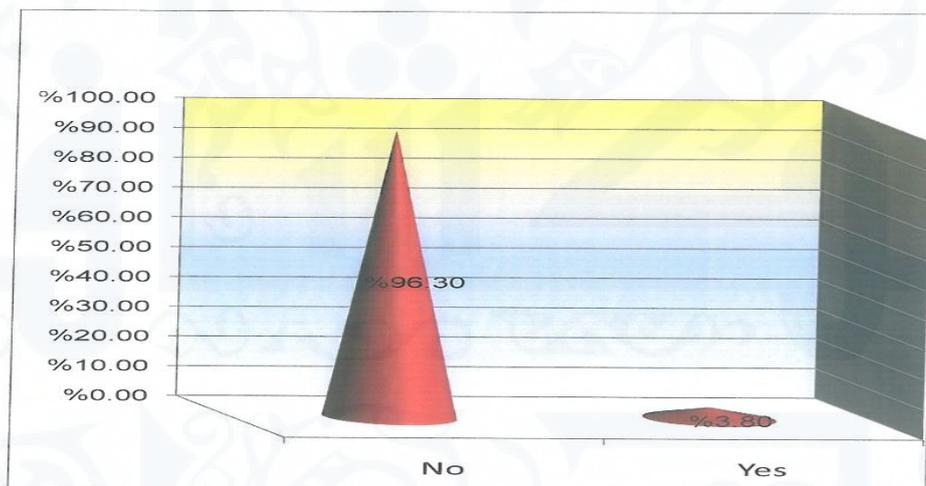


Figure (2) distribution of subject according to tacking alcohol.

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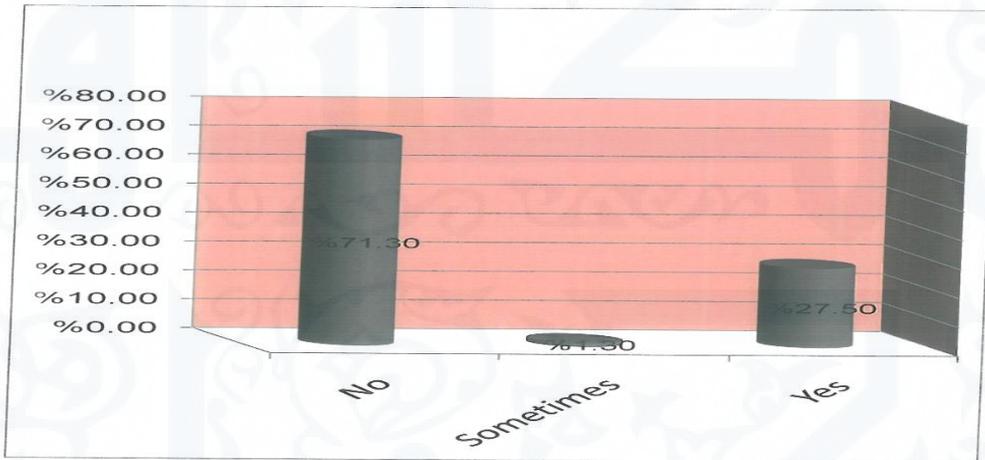


Figure (3) distribution of subject according to tacking smoking.

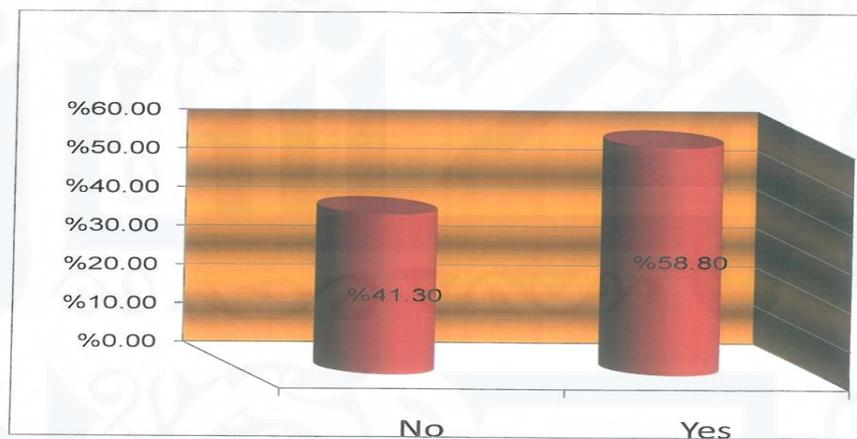
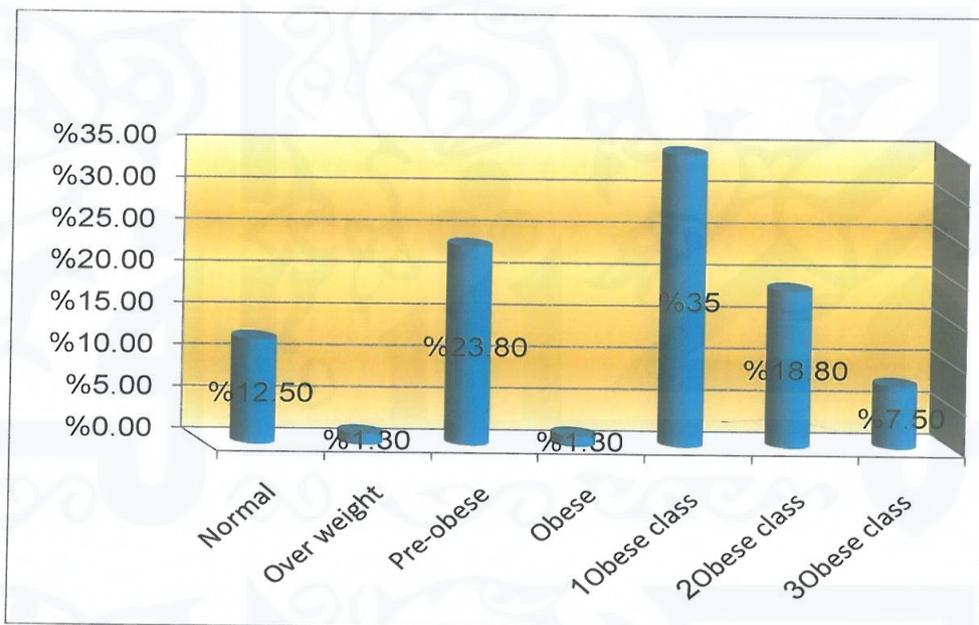


Figure (4 &5) distribution of subject according to drinking tea

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Figure(6) and table 3 demonstrate that the distribution of BMI for the patients there percentage (35%) were obese class I, (23.8%) were pre-obese and (1.3%) were overweight.

Figure (6) showed that (12.50%) were normal, (1.30%) were overweight , (23.80%) pre-obese, (1.30%) obese, (35%) obese class I, (18.80%) obese class II and (7.50%) obese class III.



Figure(6) distribution of subjects according to BMI

Statistical tests

Achi-Square test was carried out to see if there was any statistically significant association between lifestyle, BMI & dietary assessment of subjects within this patients group. From data analysis there were asignificant association between drinking tea & coffee ($p < 0.05 = 0.042$) & ($p < 0.05 = 0.034$) respectively with Ischemic heart disease (I.H.D) table (1 & 2). Among the physical activity, activity level was associated ($p < 0.05 = 0.008$) with I.H.D. Lacking of exercise is greater risk of cardiovascular diseases especially I.H.D as compared to other cardiovascular types according to data analysis there were significance difference between I.H.D and exercise ($p < 0.05 = 0.008$).

Among BMI, it was associated ($p < 0.05 = 0.016$) with I.H.D. The subjects classified as class I obese (18.8%), class II (6.25%) class III (3.75%). Tabl (3). From data analysis there were asignificant association ($p < 0.05 = 0.048$) with I.H.D and special dietary pattern. As well as asignificant difference between I.H.D and water ($p < 0.05 = 0.048$) table (4). Related to data analysis there were asignificant difference between I.H.D and calories intake ($p < 0.05 = 0.020$) table 3

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Table 1: Association of drinking tea with I.H.D

Ischemic heart disease	Do you drink tea?		Total
	No	Yes	
Uninfected	12.5%	30%	42.5%
Infected	15%	42.5%	57.5%
Total	27.5%	72.5%	100%

Table 2: Association of calories intake with I.H.D

Ischemic heart disease	Is the patient followed a special diet?		Total
	No	Yes	
Uninfected	27.5%	15%	42.5%
Infected	47.5%	10%	57.5%
Total	75%	25%	100%

Table 3: Association between BMI and I.H.D

Ischemic heart disease	Body mass index							Total
	Normal	Over weight	Pre-obese	Obese	Obese class 1	Obese class 2	Obese class 3	
Uninfected	8.75%	0%	5%	0%	18.75%	6.25%	3.75%	4.25 %
Infected	3.75%	1.25%	18.75%	1.25%	16.25%	12.5%	3.75%	57.5 %
Total	12.5%	1.25%	23.75%	1.25%	35%	18.75%	7.5%	100%

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Table 4: Association between drinking water and I.H.D

Ischemic heart disease	Do you drink water in sufficient quantity?		Total
	No	Yes	
Uninfected	7.5%	35%	42.5%
Infected	13.75%	43.75%	57.5%
Total	21.25%	78.75%	100%

Discussion

The current study revealed that the majority of the sample were female and age ranging from more than 18-70 yrs and more, the majority of them were ranged in 50-60 were more, vulnerable age group to cardiovascular disease.

Considering educational level, the majority of them were illiterate which represent 28.8% from the sample so there were relation between education and heart disease. Also the most of responds had DM and hypertension which represented 83.80% from total sample fig 5. In this study were (46.30%) suffered from ischemic heart disease. This study found that there were asinificant relation between drinking tea, coffee and chance to had cardiovascular diseases, from the result there were drinking tea represented (72.5%), ($p=0.042$) and drinking coffee (41.3%), ($p=0.034$) from total sample respectively. Regarding to doing exercise, this study found that the number of patients who do exercise 37.5% and the resaponds were not doing exercise 60% and there were asinificant relation between lacking activity and cardiovascular diseases ($p=0.008$).

According to the result in this study, there were asinificant relation between BMI and cardiovascular diseases. It reported that about 23.8% were pre-obese, 35% were obese and 1.3% were class I obese. In this study there were asinificant relation between BMI and cardiovascular diseases ($p=0.016$).

Regarding to follow a special diet, the current study found that, 25% follow diet and 75% not follow diet. There were asinificant relation between a special diet and cardiovascular diseases ($p=0.048$).

About eating fruit and vegetables was 8.85% eat fruit and vegetables and which is low eating of them which representative 78.8% from total sample. In this study, There were asinificant relation with drinking water and cardiovascular diseases ($p=0.048$).

The result of current study found that, there were a significant relation between calories and heart diseases, they were consume 2000 kcal/day which represented 15% from the total sample and 1000-1500 kcal/day which represented 32.5% from the total subjects, but it refer to this diet nearly meet the dialy needs according WHO, the reason is this group were hospitalized patients.

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Summary and conclusion

Summary

In the developed countries, at least one-third of all CVD is attributable to five risk factors: tobacco use, alcohol use, high blood cholesterol and obesity. In developing countries with high mortality results from high blood pressure, high cholesterol, tobacco and alcohol use, as well as low consumption of fruit and vegetables.

The aim of the study was deliberate up on the impacts of obesity and lifestyle and to study the role of obesity and lifestyle including (smoking, drinking alcoholic beverages, coffee, tea, taking medication, exercise) on cardiovascular patients.

This was a pilot study on cardiovascular patients among both sexes adult male and female. Carried out in hospitals (aljamheria, alhawari, benghazi medical center, heart center) in benghazi city, libya from 1st January to 12th february 2011.

In this study were carried out a random study on adults cardiovascular patients in libyan city of benghazi. A stratified random sample of 150 adults cardiovascular participants from male and female aged 18-70 yrs old selected from hospitals were enrolled for the study. Participants were interviewed to filled up a detailed structured self administered Arabic language questionnaire designed to collect information related to select socio-economic characteristic, lifestyle information, anthropometric measurements and diet. All data except for energy intake was coded prior to being entered in a computer and analyzed by SPSS (version 19). Level of significance was set at p value < 0.05 Descriptive Statistical and Chi Square test were used for statistical analysis of data. This study found that there were a significant relation between drinking tea, coffee and chance to had cardiovascular diseases, from the result there were drinking tea represented (72.5%), ($p=0.042$) and drinking coffee (41.3%), ($p=0.034$) from total sample respectively. Regarding to doing exercise, this study found that the number of patients who do exercise 37.5% and the respondents were not doing exercise 60% and there were a significant relation between lacking activity and cardiovascular diseases ($p=0.008$). According to the result in this study, there were a significant relation between BMI and cardiovascular diseases. It reported that about 23.8% were pre-obese, 35% were obese and 1.3% were class I obese. In this study there were a significant relation between BMI and cardiovascular diseases ($p=0.016$). Regarding to follow a special diet, the current study found that, 25% follow diet and 75% not follow diet. There were a significant relation between a special diet and cardiovascular diseases ($p=0.048$).

About eating fruit and vegetables was 8.85% eat fruit and vegetables and which is low eating of them which representative 78.8% from total sample. In this study, There were a significant relation with drinking water and cardiovascular diseases ($p=0.048$). The result of current study found that, there were a significant relation between calories and heart diseases, they were consume 2000 kcal/day which represented 15% from the total sample and 1000-1500 kcal/day which represented 32.5% from the total subjects, but it refer to this diet nearly meet the dialy needs according WHO, the reason is this group were hospitalized patients.

Conclusion

In this study, the most of subjects were female which represents nearly about more than half of the sample. Most of the participants were drink tea, coffee which represented 72.5% and 41.3% respectively. Also the majority of respondents did not do exercise which represented 60.0% from the sample.

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In the current study, the BMI for the patients were (35%) were obese class I. (23.8%) were per-obese and (1.3%) were overweight. In this study has attempted to make sure the obesity and lifestyle were affect on cardiovascular patients for group of people have got cardiovascular diseases. This study had prevalence of Ischemic heart disease which had represented (46.30%) from the total sample. The responds in this study were consume 2000 kcal/day which representated 15% from the total sample and 1000-1500 kcal/day which represented 32.5% from the sample. It seems to be they follow a diet because they were in-patients.

Recommendation

Our finding suggests that more work is needed if healthy people to control and prevent of CVDs of population-wide intervention that can implemented include:

- 1- Maintaining an ideal body weight by eating healthy diet and regular exercise.
- 2- If people had diabetes, control pressure and blood sugar.
- 3- Eating at least five serving of fruit and vegetables aday.
- 4- Comperhensive tobacco control policies.
- 5- Engaging in physical activity for at least 30 minutes every day of the week will help to prevent heart attacks and strokes.
- 6- All individuals should eat at least two portions of fish per week, one of which should be afatty fish.

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