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Quality of Life for Elderly People with Cardiovascular Diseases in Rural Areas at Naser City

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Abstract

Back ground: Age is associated with increased cardiovascular risk factors and cardiovascular disease, which constitutes the leading cause of morbidity and mortality in elderly people. **Aim**: to assess quality of life for elderly people with cardiovascular diseases in rural areas at Naser city. **Design** A descriptive exploratory design was utilized in this study. **Setting**: This study was carried out in internal medicine outpatient clinic at Naser general hospital, Beni-Suef Governorate, Egypt. **Sample**: A purposive sample of 150 elderly people with cardiovascular diseases was included. **Tools**: Two tools were used, a structured interview questionnaire sheet, included two parts. Part I: Socio-demographic characteristics of the elderly people**. Part II**: Past medical history. **Part III:** Knowledge assessment questionnaire to assess elderly' knowledge regarding cardiovascular diseases**. Tool II**: The World Health Organization quality of life questionnaire. **Results**: 70.0% of the participants had poor total knowledge regarding cardiovascular disease. 68.0% of the elderly people with cardiovascular diseases had moderate total quality of life. Conclusion: there was a significant relation between studied participant's total knowledge score and their age, educational level and living condition with also there was a significant relation between studied participant's total quality of life score and age, gender, educational level and occupation .Recommendations: Health educational program should be developed and implemented for elderly to educate them about cardiovascular disease with the most current information and practices about their quality of life.

Keywords: Quality of Life, Elderly People, Cardiovascular diseases, Rural areas.

Introduction

The cardiovascular system, which is made up of the heart and the blood vessels arteries, capillaries, and veins, keeps the blood distributed throughout the body. Genetics and lifestyle have a significant interaction with aging. The aging process will be very different for someone who leads a healthy lifestyle, has access to regular, adequate medical care and screenings, and enters late adulthood in good health than for someone who is sedentary, makes poor dietary and lifestyle choices, and has lived with chronic disease both before and when they enter late adulthood **(Da Silva & Schumacher, 2021).**

A third to half of cases of cardiovascular disease (CVD) are caused by heart failure, myocardial infarction (MI), and coronary artery disease (CAD), also known as coronary heart disease (CHD), which is caused by decreased myocardial perfusion and causes angina. Transient Ischemic Attack (TIA) and stroke are examples of cerebrovascular disease. Peripheral Artery Disease (PAD); specifically, limb-related artery disease that can lead to claudication. Thoracic and abdominal aneurysms are included in aortic atherosclerosis **(Visseren et al., 2022).**

Elderly cardiovascular diseases should be referred to if a patient exhibits symptoms such as exertional dyspnea, increasing weariness, palpitations or a very sluggish heartbeat, dizziness, collapse, or falls. Older adults frequently experience just vague chest discomfort. In particular, when coronary artery ischemia occurs, the subgroup of diabetic individuals may arrive with no discomfort at all or with relatively mild pain **(Lazzeroni et al., 2022).**

Compared to metropolitan settings, the prevalence of uncontrolled traditional cardiovascular risk factors is substantially higher in rural communities. The population in rural areas is substantially older than that of urban and suburban areas. Additionally, they are more likely to be obese, have high blood pressure, and have diabetes mellitus. According to H**arrington et al. (2020**), tobacco usage is more prevalent in rural than in urban settings.

The phrase "quality of life" (QoL) describes a person's overall state of wellbeing. Regarding how to conceptualize quality of life, scientists, sociologists, and physicians disagree. Nonetheless, there are three categories into which existing definitions can be divided: (1) global definitions, such as happiness/unhappiness. definitions that deconstruct quality of life into a number of components. or dimensions; and (3) targeted definitions, which are frequently practical methods where QoL is regarded as being equivalent to areas of the researchers' concern, since functional status is occasionally employed as a gauge of QoL **(Boehnke & Rutherford, 2020).**

Health promotion and sickness prevention are prioritized, particularly for patients with cardiovascular disease. Community Health Nurse (CHN) skills include physical care, counseling, communication, listening, and observation. The demand for improved abilities to evaluate population needs at the community level has arisen as a result of recent concerns about environmental, sociocultural, psychological, and economic aspects of community health **(Smith & Mapstone, 2020).** CHN may communicate with patients informally, provide structured classes, or serve as consultants to patients with CVD. 2020; Dupin et al.

Significance of the study:

Worldwide, cardiovascular diseases (CVDs) constitute the primary cause of death. In 2019, an estimated 17.9 million deaths worldwide were attributed to CVDs, accounting for 32% of all fatalities. Heart attacks and strokes accounted for 85% of these fatalities. More than 75% of deaths from CVD occur in low- and middle-income nations. CVDs were responsible for 38% of the 17 million premature deaths (those under 70) that occurred in 2019 as a result of non-communicable diseases. By addressing behavioral and environmental risk factors such tobacco use, poor diet and obesity, physical inactivity, problematic alcohol use, and air pollution, the majority of cardiovascular illnesses can be avoided. Early detection of cardiovascular illness is crucial for the start of medication and counseling care **(WHO, 2021).**

Percentage of elderly population is growing due to improvement of health care services. In Egypt, Cardiovascular Disease (CVD) has been the leading cause of premature death since the 1990s **(Hassanin et.al., 2020).** In.2023 the number of elderly in Egypt reached 7.3 million. CVD accounted for 46.2% of the overall mortality in Egypt. Heart Failure (HF) poses an important and growing public health burden. Rural to urban percentage of 60.3% and 39.7%. Overall mortality was 24% at discharge. The most frequent diagnosis was acute myocardial infarction (28.8%). High Craniocervical instability (CCI) was 34.9%. Older patients (≥60 years), respectively. **(Husain et al.,2020)**

Aim of the Study

This study aimed to assess quality of life for elderly people with cardiovascular diseases in rural areas at Naser city through:

- Assessing knowledge of elderly people regarding cardiovascular diseases.
- Assessing level of quality of life for elderly people with cardiovascular diseases in rural areas.

Research questions:

The following questions formulated to achieve the aim of this study

- What is the level of knowledge of elderly people regarding cardiovascular diseases?
- What is the level of quality of life for elderly people with cardiovascular diseases in rural areas?
- Is there a relationship between socio demographic characteristics of elderly people and their knowledge and quality of life?

Subjects and Method:

Research design:

A descriptive exploratory design was utilized in this study.

***Setting*:**

This study was carried out in internal medicine outpatient clinic, in the first floor next to the surgery clinic, at Nasser general hospital, Beni-Suef Governorate, Egypt.

Study population:

A purposive sample of 150 elderly people with cardiovascular diseases was included.

The sample size calculation was calculated by using the following equation:

$n= N/\{1+N(e)^2\}$ ***(Sreedharan et al., 2019)***

Where n = sample size, N = population size is 248

e= 0.05 is the level of population

n= 248/ {1+248(0.0025)} = 150

Inclusion criteria:

-Older people ≥ 60 years.
-Living in rural areas.
- Diagnosed with cardiovascular disease.
-Accepting to participate in the study.

-Exclusion criteria:

-Patients with cognitive impairment.
-Age under 60 years old.
-Not confirmed CVD diagnosis.
-Patients with terminal CVD diagnosis.
-Patients unable to communicate.

Tools for data collection:

The required data was collected through two tools to achieve the aim of the study, accurate date of the study was started and completed within 6 months from the beginning of January 2023 to the ending June 2023.

Tool I: A structured interviewing questionnaire:

This questionnaire was designed by the investigator based on reviewing related literature review and was written in simple Arabic language to gather data regarding the following parts:

Part I:

Socio-demographic characteristics of the elderly people include: age, sex, marital status, educational level, occupation, living condition and family monthly income…etc.

Part II:

Past history including type of medical disorders, onset of cardiovascular disease and previous hospital admission, signs of heart disease, type of heart disease, a diagnostics study used for cardiovascular disease diagnosis. etc.

Part III:

Knowledge assessment questionnaire to assess elderly' knowledge regarding cardiovascular diseases. It was adapted from ***(Shrestha, et al, 2020)***.

Scoring system of elderly knowledge, it includes 29 closed ended questions such as, if he/she realized that having CVD, knowledge about definition of CVD, risk factor, family history, relation between smoking and CVD and prevention of CVD…. etc. Each question three answers were included, yes, no, and don't know. The participants' response was scored as (0) for no/ don't know, and (1), for yes.

Total knowledge score was calculated as the following:

Poor knowledge < 50.0% of total knowledge score (0-13).

Fair knowledge 50-75% of total knowledge score (14-21)

Good knowledge→75.0% of total knowledge score (22-28).

Tool II: The World Health Organization quality of life (WHOQOL-BREF) questionnaire: it was adapted from ***(Shayan, et al, 2020)*** that used to assess quality of life of elderly patients with cardiovascular diseases. It was translated into Arabic by the investigator, it included 24 items and divided into 4 parts included **physical health** (7 items) such as pain, satisfaction with activists, sleep, energy, ADL and function. **psychological health** (6 items) such as if he/she enjoy life, feel life meaningful Able to concentrate, accept bodily appearance, satisfaction with self, how often negative feelings. **social relations** (3 items) such as satisfaction with personal relationships, satisfaction with sex life and friends' support. environment **domain** (8 items) such as feel safe in daily life, healthy physical environment, enough money for needs, access to health service, satisfaction information for day-to-day life, have leisure opportunity and satisfaction with transport.

Scoring system for quality of life the participants responses was scored as (1) for not at all, (2) for not much, (3) for moderate amount, (4) for a very much, and (5) for extremely.

The total quality of life score was calculated as:

Low quality of life <60.0% of total quality of life score (0-71)

Moderate quality of life 60.0%-75 of total quality of life score (72-90)

High quality of life > 75.0% of total quality of life score (91-120).

Validity:

The study tools were revised for clarity, relevance,comprehensiveness understanding, and applicability by a panel of five experts from faculties of nursing to measure the content validity of the tools and the necessary modification was done accordingly.

Reliability:

Reliability was done by Cronbach alpha test. It.was.0.957.for.the.knowledge questionnaire and 0.863 for the quality of life scale.

Ethical considerations:

An official permission to conduct the proposed study was being obtained from the Scientific Research Ethics Committee from faculty of medicine Beni-Suef university in 6th December 2022 under approval number FMBSUREC/06122022. Participation in the study is voluntary and subjects was being given complete full information about the study and their role before signing the informed consent. The ethical considerations were include explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information where it was not being accessed by any other party without taking permission of the participants. Ethics, values, culture and beliefs was being respected.

II- Operational design:

The operational item includes preparatory phase, pilot study and field work.

A-Preparatory phase:

It was include reviewing related literature and theoretical knowledge of various aspects of the study using books, articles, internet, periodicals and magazines to develop tools for data collection.

B- Pilot study:

A pilot study was conducted on 10%(15) of elderly people of the sample under study to test applicability, clarity, and efficiency of the tools. The essential modifications were incorporated according to the results of the pilot study. Patients shared in the pilot study were not involved in the sample

C- Field work:

Fieldwork was included the following:

- An approval was obtained from the study subjects individually and research scientific ethical committee of faculty of nursing at Beni-Suef University using a written or oral informed consent obtained from each participant prior to data collection.
- Data was collected and expected to be completed within six months.
- Data collection was done 2 days/ week by the investigator from 9am to 12 pm.

III-Administrative design:

Approval to carry out this study was obtained from the dean of the faculty of nursing of Beni-Suef University and directors of Naser general hospital, Beni-Suef governorate, Egypt the approval included the permission to collect the necessary data and explain the purposes and nature of the study.

IV- Statistical design:

The Statistical Package for the Social Sciences (SPSS), version 26, was used to compute and evaluate the data after it had been collected. Using descriptive statistical tests, the results were

described using numbers, percentages, and mean standard deviation (SD). The "x2" test and other appropriate inferential statistics were employed to ascertain the relationship between the qualitative data. At 0.05, the P value was set.

Results

Table (1): Distribution of personnel characteristics of the studied participants (n=150)

Variable	Items	Frequency	%
Age in years	60-<65	55	36.7
	≥ 65	95	63.3
	Mean ±SD	**63.59±3.65**	
Gender	Male	85	56.7
	Female	65	43.3
Social status	Married	132	88.0
	Widow	18	12.0
Educational level	Not read and write	92	61.3
	Read and write	40	26.7
	Secondary education	18	12.0
Occupation	Not working	86	57.3
	Free work	46	30.7
	Retire	18	12.0
Monthly income	Enough	56	37.3
	Not enough	94	62.7
Living condition	Alone	9	6.0
	Family	141	94.0

Table (1): Displays that, 63.3% of the studied participants age ≥ 65 years old, with mean age of 63.59±3.65.in addition 56.7% of participants were male, 88.0% of them were married and 61.3% of them were unable to read and write. Moreover, 57.3% of them not working, 62.7% of them had not enough monthly income and 94.0% of them live with their family.

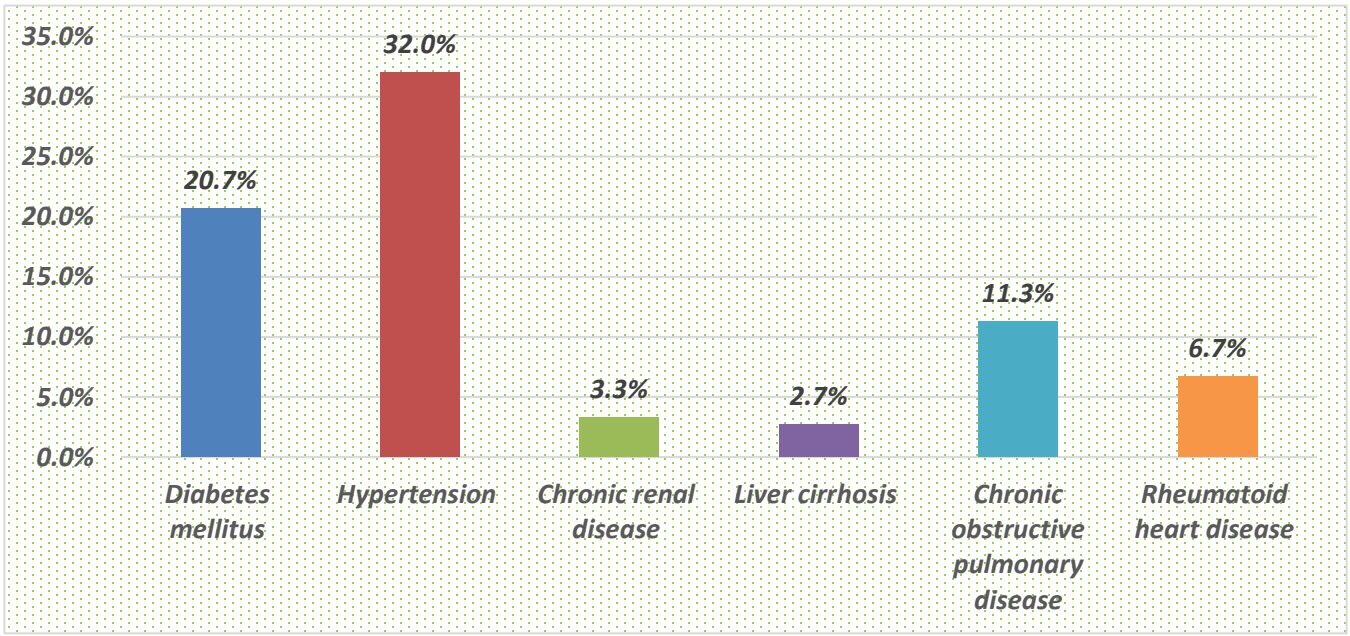

Figure (1): Distribution of elderly people according to their past medical history.

Figure (1): Displays that, 32.0%, 20.7% and 11.3% of the studied participants had a past medical history of hypertension, diabetes mellitus and chronic obstructive pulmonary disease respectively.

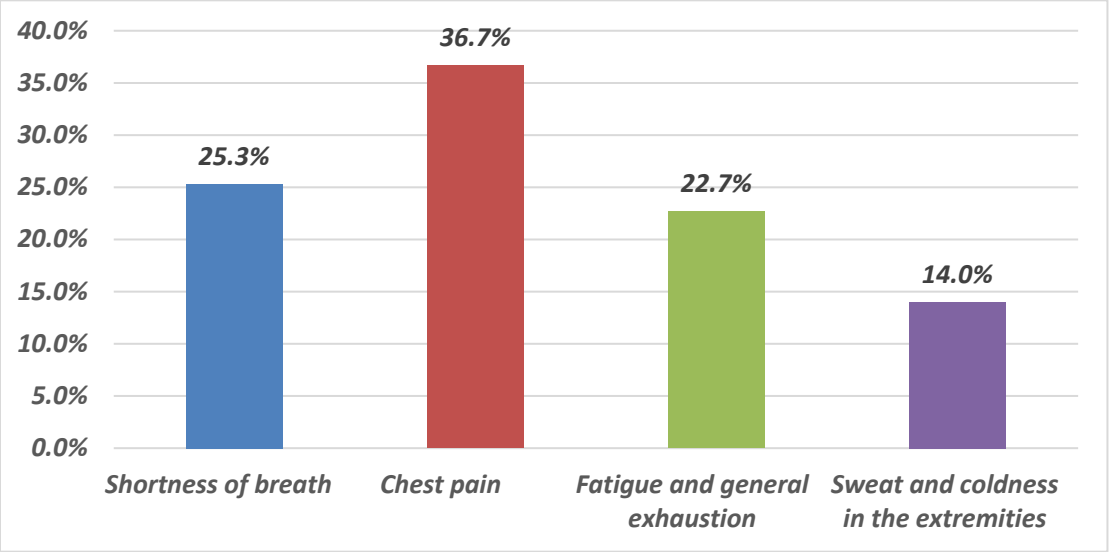

Figure (2): Distribution of elderly people according to common heart disease symptoms.

Figure (2): Illustrates that, 36.7%, 25.3% and 22.7 % of the studied participants had a symptoms of chest pain, shortness breath and fatigue and general exhaustion respectively.

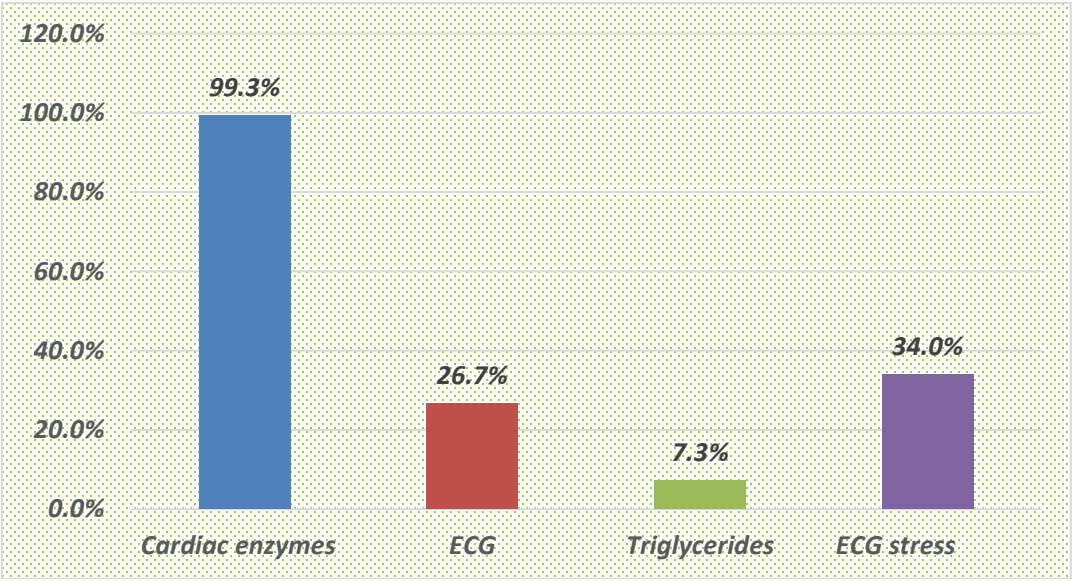

Figure (3): Distribution of elderly people according to common diagnostic studies.

Figure (3): Illustrates that, 99.3 %, 34.0% and 26 .7 % of the studied participants were diagnosed through cardiac enzymes, ECG stress and ECG.

Table (2): Distribution of history of cardiovascular diseases among studied participants (n=150)

history of cardiovascular	No	%
Onset of heart disease		
<5 years	65	43.3
5-10 years	60	40.0
≥ 10 years	25	16.7
Mean ±SD	8.36±6.35	
Medication adherence		
No	44	29.3
Yes	106	70.7
Previous hospital admission		
No	91	60.7
Yes	59	39.3
Family History of heart disease		
No	106	70.7
Yes	44	29.3

Table (2): Displays that, 70.7% of the studied participants were adhered to take medication and had no family history for heart disease. In addition, 43.3% of them had heart disease from less than 5 years old. Moreover 60.7% of them had no history of hospital admission.

Table (3): Distribution of elderly people according to their knowledge regarding cardiovascular disease (n=150).

Knowledge	Yes		No		Don't know	
	No	%	No	%	No	%
1. CVD can be prevented	37	24.7%	35	23.3%	78	52.0%
1. Smoking is preventable cause of death and diseases in our country	46	30.7%	43	28.7%	61	40.6%
2. Fats that are solid at room temperature are beneficial for heart health	34	22.7%	72	48.0%	44	29.3%
3. Fatty meals do not increase the cholesterol level in the blood	28	18.7%	34	22.7%	88	58.6%
2. It is harmful to eat red meat more than thrice a week	27	18.0%	34	22.7%	89	59.3%
3. Eating excess salty food leads to an increase in blood pressure	35	23.3%	32	21.3%	83	55.4%
4. Person always realizes if he/she has heart disease	25	16.7%	33	22.0%	92	61.3%
5. It is beneficial to eat 2-3 portions of food and 2 portions of vegetables daily	29	19.3%	26	17.4%	95	63.3%
6. A low carbohydrate and low fat diet is beneficial for heart health	50	33.3%	45	30.0%	55	36.7%
7. Regular exercise reduces risk of heart disease	51	34.0%	45	30.0%	54	36.0%
8. Risk can be reduced by exercising only in gym	51	34.0%	45	30.0%	54	36.0%
9. Slow walking and wandering are also considered as exercise	49	32.7%	54	36.0%	47	31.3%
10. Hypertension medications should be used for lifetime	38	25.3%	40	26.7%	72	48.0%
11. If you had CVD, would you like to change your eating habits?	18	12.0%	34	22.7%	98	65.3%
12. If you had CVD, would you like to quit smoking?	49	32.7%	54	36.0%	47	31.3%

According to T**able (3)**, 34.0% of the participants in the study were fully aware that regular exercise lowers the risk of heart disease and that this risk can be decreased by exercising exclusively in a gym. Furthermore, 33.3% of them knew without a doubt that a diet low in fat and carbohydrates is good for heart health. However, 65.3%, 63.3%, and 61.3% of the participants in the study are unaware that they should alter their eating habits, that it is good to

consume two to three parts of food and two servings of vegetables every day, and that a person is constantly aware of whether they have heart disease.

Table (4): Distribution of elderly people according to their knowledge regarding risks of cardiovascular diseases (n=150).

Knowledge	complete		Incomplete correct		Don't know	
	No	%	No	%	No	%
1. The risk of developing heart disease is reduced when smoking is stopped	41	27.3%	35	23.3%	74	49.3%
4. Family history of CVD increases risk of having heart disease	37	24.7%	38	25.3%	75	50.0%
5. Elderly people are at higher risk of having heart disease	33	22.0%	38	25.3%	79	52.7%
6. Overweight individuals have a higher risk of heart disease	32	21.3%	20	13.4%	98	65.3%
7. Stress, sorrow, and burden increase the risk of heart disease	48	32.0%	47	31.3%	55	36.7%
8. Blood pressure increases under stressful conditions	51	34.0%	45	30.0%	54	36.0%
9. High blood pressure is a risk factor for heart disease	45	30.0%	45	30.0%	60	40.0%
10. High cholesterol is a risk factor for heart disease	37	24.7%	10	6.7%	103	68.6%
11. There is a risk of heart disease if good cholesterol (HDL) is high	42	28.0%	20	13.3%	88	58.7%
12. There is a risk of heart disease if bad (LDL) cholesterol is high	48	32.0%	51	34.0%	51	34.0%
13. Every person with high cholesterol is given medicine	33	22.0%	30	20.0%	87	58.0%
14. Diabetes is a risk factor for heart disease	20	13.3%	20	13.3%	110	73.3%
15. Blood pressure control reduces the risk of heart disease	38	25.3%	35	23.3%	77	51.3%
16. The risk can be reduced in diabetic patients with glucose control	20	13.3%	4	2.7%	126	84.0%

Table (4): indicates that, 34.0%, 32.0% and 30.0% of the studied participants had a complete correct knowledge that blood pressure increases under stressful conditions, stress, sorrow and burden increase the risk of heart disease, there is a risk of heart disease if bad (LDL) cholesterol is high, and high blood pressure is a risk factor for heart disease respectively. On the other hand, 84.0% of the participants don't know the risk can be reduced in diabetic patients with glucose control, 73.3% of them don't know that diabetes is a risk factor for heart disease, and 68.6% of them also don't know that high cholesterol is a risk factor for heart disease.

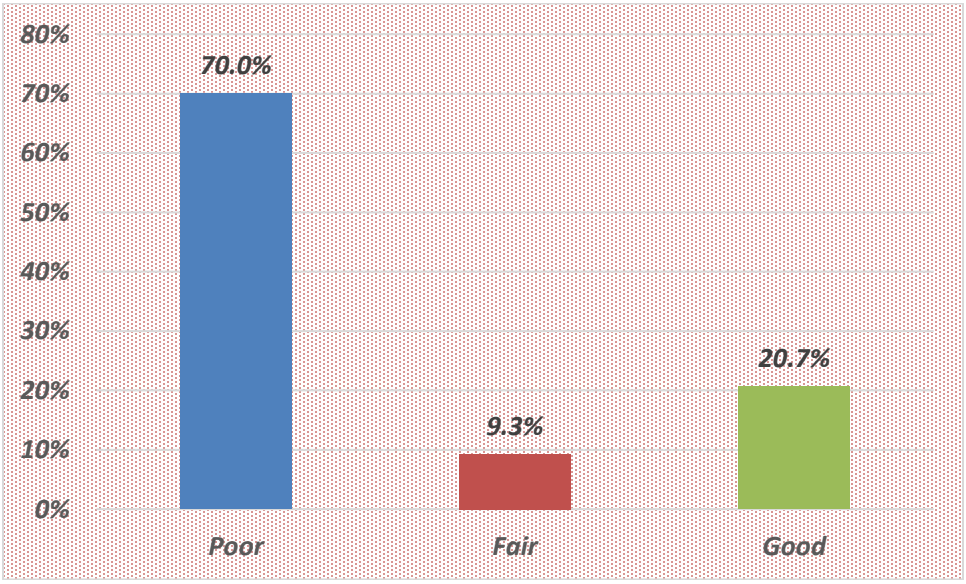

Figure (4): percentage distribution of elderly people according to total knowledge regarding cardiovascular diseases among studied participants.

Figure (4): illustrates that, 70.0% of the participants had poor total level knowledge regarding cardiovascular disease, 9.3% of them had a fair total level of knowledge and 20.7% of them had a good level of total knowledge.

Table (5): Distribution of elderly people according to physical health quality of life domains (n=150).

Physical health	Not at all		Not much		moderate amount		A Very much		Extremely	
	No	%	No	%	No	%	No	%	No	%
1. Pain prevents activities	29	19.3%	77	51.3%	4	2.7%	21	14.0 %	19	12.7 %
2. Enough energy for daily life	2	1.3%	14	9.3%	18	12.0%	92	61.3 %	24	16.0 %
3. Able to get around	16	10.7%	10	6.7%	23	15.3%	87	58.0 %	14	9.3%
4. Satisfaction with sleep	14	9.3%	62	41.3%	41	27.3%	14	9.3%	19	12.7 %
5. Satisfaction with ADL	12	8.0%	15	10.0%	23	15.3%	72	48.0 %	28	18.7 %
6. Satisfaction with work capacity	6	4.0%	5	3.3%	20	13.3%	108	72.0 %	11	7.3%
7. Need treatment to function	35	23.3%	54	36.0%	22	14.7%	15	10.0 %	24	16.0 %

Table (5): indicates that, 72.0% of the participants had a very much satisfaction with work capacity, 61.3% had a very much Enough energy for daily life and 58.0% were very much Able to get around.51.3% not much agreed that Pain prevents activities, 41.3% of them not much satisfaction with sleep, 36.0% not much need treatment to function.

Table (6): Distribution of elderly people according to psychological health quality of life domains (n=150).

Psychological health	Not at all		Not much		moderate amount		A Very much		Extremely	
	No	%	No	%	No	%	No	%	No	%
1. How much enjoy life	23	15.3%	14	9.3%	34	22.7%	75	50.0 %	4	2.7%
2. Feel life meaningful	25	16.7%	19	12.7%	17	11.3%	80	53.3 %	9	6.0%
3. Able to concentrate	17	11.3%	1	0.7%	24	16.0%	102	68.0 %	6	4.0%
4. Accept bodily appearance	16	10.7%	23	15.3%	45	30.0%	66	44.0 %	0	0.0%
5. Satisfaction with self	21	14.0%	40	26.7%	20	13.3%	69	46.0 %	0	0.0%
6. How often negative feelings	26	17.3%	33	22.0%	22	14.7%	65	43.3 %	4	2.7%

Table (6): Indicates that, 68.0% of the participants were a very much able to concentrate, 53.3% are very much feel life meaningful, 50.0% were very much enjoy life. On the other hand, 17.3% of them not at all had negative feelings and 26.7% of them not much satisfied with self.

Table (7): Distribution of elderly people according to social relation quality of life domains (n=150)

Social relations	Not at all		Not much		moderate amount		A Very much		Extremely	
	No	%	No	%	No	%	No	%	No	%
1. Satisfaction with personal relationships	12	8.0%	4	2.7%	59	39.3%	64	42.7 %	11	7.3%
2. Satisfaction with sex life	28	18.7%	5	3.3%	7	4.7%	66	44.0 %	44	29.3 %
3. Satisfaction with friends' support	16	10.7%	41	27.3%	50	33.3%	41	27.3 %	2	1.3%

Table (7): indicates that, 44.0% of the participants were a very much Satisfaction with sex life, 42.7% of them were very much satisfied with personal relationships, 39.3% and 33.3% of them had a moderate amount of Satisfaction with personal relationships and satisfaction with friends' support respectively.

Table (8): Distribution of elderly people according to Environmental health quality of life domains (n=150).

Environment	Not at all		Not much		moderate amount		A Very much		Extremely	
	No	%	No	%	No	%	No	%	No	%
1. Feel safe in daily life	21	14.0%	9	6.0%	18	12.0%	79	52.7 %	23	15.3 %
2. Healthy physical environment	31	20.7%	7	4.7%	40	26.7%	53	35.3 %	19	12.7 %
3. Have enough money for needs	21	14.0%	6	4.0%	5	3.3%	58	38.7 %	60	40.0 %
4. Satisfaction information for day-to-day life	15	10.0%	25	16.7%	12	8.0%	69	46.0 %	29	19.3 %
5. Have leisure opportunity	20	13.3%	14	9.3%	10	6.7%	37	24.7 %	69	46.0 %
6. Satisfaction living place	24	16.0%	16	10.7%	32	21.3%	66	44.0 %	12	8.0%
7. Satisfaction with access to health service	16	10.7%	29	19.3%	1	0.7%	53	35.3 %	51	34.0 %
8. Satisfaction with transport	12	8.0%	14	9.3%	1	0.7%	59	39.3 %	64	42.7 %

Table (8): indicates that ,46.0%, 42.7% and 40.0% of the participants were extremely have leisure opportunity, satisfied with transport, and have enough money for needs respectively.in addition, 52.7%, 46.0%, and 44.0% of them were very much Feel safe in daily life, Satisfaction information for day-to-day life and Satisfaction living place respectively.

Table (9): Distribution of mean score of quality of life domains among studied participants.

Quality of life domains	Minimum	Maximum	Mean	Std. Deviation	% of mean score	Ranking
Physical health	13.00	29.00	22.4800	2.95087	64.22857	3
Psychological health	9.00	24.00	18.7800	3.57822	62.6	4
Social relation	4.00	14.00	9.8200	2.36890	65.46667	2
Environment	14.00	38.00	28.5867	5.54927	71.46675	1
Total quality of life score	50.00	100.00	79.6667	9.08621	66.38892	

Table (9): indicates that, the highest mean score of the quality of life domains was environmental domain by percentage of 71.46%, followed by social relation by mean percentage of 65.46% and physical health domain by percentage of 64.%.

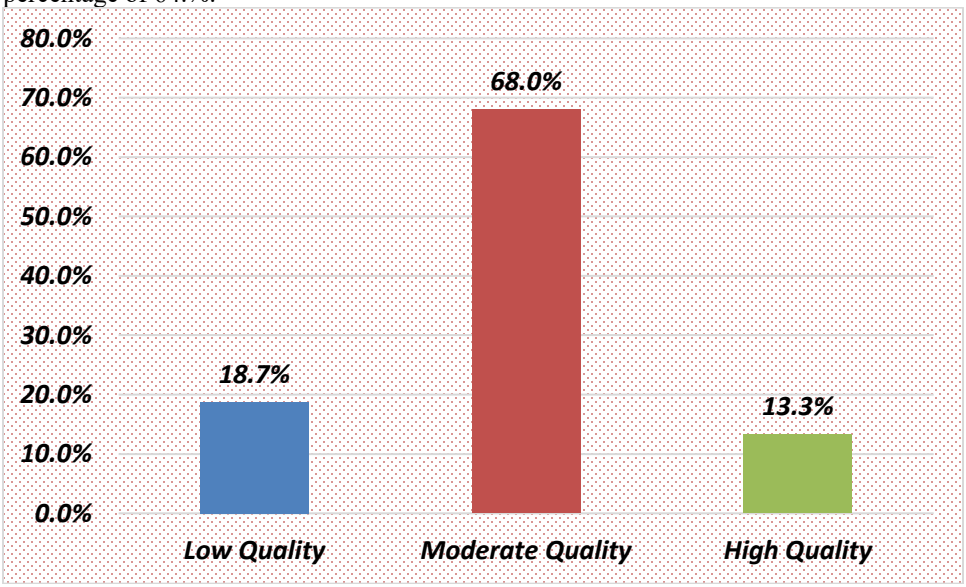

Figure (5): percentage distribution of elderly people according to total quality of life scores.

Figure (5): illustrates that, 68.0% of the participants had moderate total quality of life scores, 13.3% of them had a high total quality and on the other hand 18.7% of them had a low total quality of life.

Table (10): Relation between studied participants' personnel characteristics and total knowledge score.

Variable	Items	Total knowledge score						Chi square	p-value
		Poor		Fair		Good			
		No	%	No	%	No	%		
Age in years	60-<65	27	49.1%	10	18.2%	18	32.7%	18.65	<0.05*
	≥ 65	78	82.1%	8	8.4%	9	9.5%		
Gender	Male	61	71.8%	8	9.4%	16	18.8%	1.25	>0.05
	Female	44	67.7%	10	15.4%	11	16.9%		
Social status	Married	95	72.0%	16	12.1%	21	15.9%	3.29	>0.05
	Widow	10	55.6%	2	11.1%	6	33.3%		
>Educational level	Not read and write	71	77.2%	12	13.0%	9	9.8%	27.56	<0.05*
	Read and write	29	72.5%	4	10.0%	7	17.5%		
	Secondary education	5	27.8%	2	11.1%	11	61.1%		
Occupation	Not working	62	72.1%	9	10.5%	15	17.4%	2.32	>0.05
	Free work	30	65.2%	8	17.4%	8	17.4%		

	Retire	13	72.2%	1	5.6%	4	22.2%		
Monthly income	Enough	38	67.9%	7	12.5%	11	19.6%	0.211	>0.05
	Not enough	67	71.3%	11	11.7%	16	17.0%		
live with	Alone	3	33.3%	2	22.2%	4	44.4%	6.39	<0.05*
	Family	102	72.3%	16	11.3%	23	16.3%		

Table (10): indicates that, there was a significant relation between studied participant's total knowledge score and their age, educational level and the status of living with (p< 0.05*). On the other hand, there was no statistical relation regarding their gender, social status, occupation and monthly income (p>0.05).

Table (11): Relation between studied participants' personnel characteristics and total quality of life score.

Variable	**Items**	**Total quality of life**						**Chi square**	**p-value**
		Low quality		**Moderate quality**		**High quality**			
		No	**%**	**No**	**%**	**No**	**%**		
Age in years	60-<65	4	7.3%	41	74.5%	10	18.2%	8.11	<0.05*
	≥ 65	24	25.3%	61	64.2%	10	10.5%		
Gender	Male	17	20.0%	63	74.1%	5	5.9%	9.43	<0.05*
	Female	11	16.9%	39	60.0%	15	23.1%		
Social status	Married	26	19.7%	88	66.7%	18	13.6%	0.989	>0.05
	Widow	2	11.1%	14	77.8%	2	11.1%		
Educational level	Not read and write	22	23.9%	62	67.4%	8	8.7%	8.99	<0.05*
	Read and write	5	12.5%	26	65.0%	9	22.5%		
	Secondary education	1	5.6%	14	77.8%	3	16.7%		
Occupation	Not working	20	23.3%	62	72.1%	4	4.7%	15.30	<0.05*
	Free work	7	15.2%	27	58.7%	12	26.1%		
	Retire	1	5.6%	13	72.2%	4	22.2%		
Monthly income	Enough	12	21.4%	35	62.5%	9	16.1%	1.26	>0.05
	Not enough	16	17.0%	67	71.3%	11	11.7%		
live with	Alone	1	11.1%	6	66.7%	2	22.2%	0.863	>0.05
	Family	27	19.1%	96	68.1%	18	12.8%		

Table (11): indicates that, there was a significant relation between studied participant's total knowledge score and their age, gender, educational level and occupation (p< 0.05*). On the other hand, there was no statistical relation regarding their social status, monthly income and living with status (p>0.05).

Discussion

Age is associated with increased cardiovascular risk factors and cardiovascular disease, which constitutes the leading cause of morbidity and mortality in elderly population **(Díez-Villanueva et al.,.2022; Noale et al., 2022;Lopez et al., 2023).** Hence the study was done to assess quality of life for elderly people with cardiovascular diseases in rural areas at Naser city.

Related to age of participants slightly less than two thirds of them their age were 65 years or more. This result was in agreement with **(Ciumărnean et al., 2021)** who found that 66% their age were above 70 years old. This result was in contrast with (**Townsend et al., 2022)** who found that most of participants age their age <70 years.

This study revealed that more than half of participants were male. This result was in agreement with (**Noale et al., 2020)** who conducted a study entitled "Epidemiology of cardiovascular diseases in the elderly" who found that 60% of participants were male. On the other hand, this result was in disagreement with (**Hu et al., 2023)** in London who found that 95% of participants were female.

This study showed that less than two thirds of participants were unable to read and write. This result was in disagreement with **(Abdalla et al., 2020**) in united states who found that 87.9% of participants able to read and write.

This study showed that vast majority of elderly live with their family. This result was in agreement with **(Zhang et al., 2021)** in China who found that 89% of elderly patient live with their family.

This study showed that slightly less than one third of participants had a medical history of hypertension. This result was in agreement with **(Yen et al., 2022)** in Taiwan who found that mean incident rates of coronary artery disease with history of hypertension for the participants was 31.53%.

On the other hand, this result was not similar to **(Wang et al., 2020)** who found that hypertension was associated with a higher risk for CVD and all-cause mortality, and the associations were stronger with a younger age of onset.

This study showed that slightly more than one fifth of participants had a medical history of diabetes. This result was in agreement with **(Bruemmer & Nissen, 2020)** in united states of America USA who conducted a study entitled "Prevention and management of cardiovascular disease in patients with diabetes: current challenges and opportunities" who found that more than most of patient with cardiovascular disease patient had history of diabetes mellitus.

This study revealed that more than one third of the studied participants had a symptom of chest pain. This result was in agreement with **(Stepinska et al., 2020) in Europe** who conducted a study entitled "Diagnosis and risk stratification of chest pain patients in the emergency department: focus on acute coronary syndromes. A position paper of the Acute Cardiovascular Care" who found that 43.4% of participants had a symptom of chest pain in different times.

This study revealed that approximately all the studied participants are diagnosed through cardiac enzymes. This result was in agreement with **(Khan& Rasool, 2021)** in USA who found that 95% of cardiac disease diagnosed by biomarkers that could be enzymes, hormones, and biologic substances.

This study showed that more than two thirds of participants had no family history for heart disease. This result was in agreement with **(Hu et al., 2020)** who found that the 69% of participants in the studies had family history for heart disease. This result was in disagreement with **(Shao et al., 2020)** who found that the incidence of CVD with first-degree.relatives,.family history of cardiac disease its value was over 90%.

This study showed that slightly more than three fifth of participants had no history of hospital admission. This result was in the same line with **(Botly et al., 2020)** in Canada who found that decrease the hospitalization to 59% for coronary artery and vascular disease, heart failure, heart rhythm disorders, and stroke.

From the investigator point of view this due to recent medical improvement and patient follow to their doctor order and medications.

On the other hand, this result was in disagreement with **(Díez et al., 2022)** in Spain who found that 30% of elderly patient with CVD had history of admission to hospital.

From the investigator point of view this due to unhealthy life style and daily stress.

This study revealed that slightly less than one fourth of the studied participants had a correct knowledge that CVD can be prevented This result was in agreement with **(Szczepańska, et al., 2022)** in Poland who found that CVD can be prevented by healthy nutrition from the researcher point of view this due to the development of cardiovascular diseases is undoubtedly influenced by improper dietary behavior. The most common mistakes include irregularity of meal consumption, high dietary atherogenicity: snacking on sweets between meals, low supply of dietary fiber, unsaturated fatty acids, legume seeds, and high supply of meat and meat products.

This study revealed that slightly less than one third of participants had good knowledge that smoking is preventable cause of death and diseases in our country. This result was in agreement with **(Suthar & Nagar, 2021)** in Indian who found that 26.12 % of participants had good knowledge about smoking is preventable cause of disease post teaching programme.

From the investigator point of view this due to smoking is preventable cause of disease.

This study showed that less than one fourth had knowledge that eating excess salty food leads to an increase in blood pressure. This result was in agreement with **(Hunter et al., 2022)** in Edinburgh, UK who found that excessive salt intake is associated with high blood pressure.

From the investigator point of view this effect likely.drives.cardiovascular.morbidity.and mortality, excessive salt intake is estimated to cause deaths per worldwide.

This study revealed that more than one third of the studied participants had a correct knowledge that regular exercise reduces risk of heart disease and risk

can be reduced by exercising only in gym. This result was.in. agreement. With. **(Suarningsih & Suindrayasa, 2020)** in Jimbaran who found that (39%) of participants found physical activity received attention as reduce CHD risk factors.

On the other hand, this result was in disagreement with (**Muscella et al., 2020)** in Italy who conducted a study entitled "The effects of exercise training on lipid metabolism and coronary heart disease" who found that exercise is the main factor of protecting against cardiovascular diseases.

From the investigator point of view this due to exercise training increases heart lipid metabolism and this decrease the incidence of heart diseases.

This study revealed that one third of participants had a correct knowledge regarding a low carbohydrate and low fat diet is beneficial for heart health. This result was in agreement with **(Suarningsih & Suindrayasa, 2020)** in Jimbaran who found that this study found that 38% of respondents were aware of and have adequate knowledge about CHD risk factors as a low carbohydrate and low fat diet that is beneficial for heart health.

On the other hand, this result was not similar to with (**Diab et al., 2020)** in USA who conducted a study.entitled."A..heart-healthy..diet.for cardiovascular disease prevention: where are we now?" who found that 62% of participants had a correct knowledge about healthy diet for cardiovascular disease that rich in fruits, vegetables, legumes, whole grains, and lean protein sources, with minimization/avoidance of processed foods, trans-fats, sugar sweetened beverages and carbohydrates.

This study revealed that slightly less than one third of participants had a correct knowledge regarding high blood pressure is a risk factor for heart disease among studied participants. This result was in agreement with (**Gusty et al., 2022)** in Indonesia who found tha.26 % of participants had correct knowledge regarding high blood pressure as a risk factor for heart disease.

From the investigator point of view this due to elderly need repeated health education especially who have hypertension to increase their knowledge and decrease their risk for cardiac disease.

On.the.other.hand,.this.result.was not similar to **(Suarningsih & Suindrayasa, 2020)** in Jimbaran who found that the majority of respondents were aware of and have adequate knowledge about CHD risk factors.

This study showed that more than two thirds of participants don't know that high cholesterol is a risk factor for heart disease. This result was in agreement with **(Gooding et al., 2020)** in Atlanta, Georgiawho found that 63.2% don't know that high cholesterol level is a risk factor for cardiovascular disease.

On the other hand, this result was in disagreement with **(Bartlett et al., 2022)** in USA who found that 72% of participants know that high cholesterol is a risk factor for heart disease.

From the investigator point of view this due to increase their level of education more than our participants.

This study showed that more than two-thirds of the participants had poor total knowledge regarding cardiovascular disease. **The above-mentioned results exposed and proved the research question number one, which asked about the level of knowledge of elderly people regarding cardiovascular diseases.** This finding was in the same line with **(Cushman et al., 2021)** in USA who found that in 2019 women's who have good knowledge about coronary heart disease decline to 44%.

On the other hand, this result was in disagreement with (**Gusty et al., 2022)** in Indonesia who found that about 94.8% of respondents have poor total knowledge regarding cardiovascular disease.

From the investigator point of view this due to inadequate public health education.

Related to distribution of physical health quality of life domains more than two thirds of participants had a very much satisfaction with work capacity this result was not in the same line with **(Cooper & Marshall, 2024)** in Francis who found that 70.1% of participants lack of ability to work as essentially.

According to the researcher, this is because CVD symptoms and indicators can make it difficult to work long hours.

Related to participants' satisfaction with sleep more than two fifth of them not much satisfaction with sleep. This finding was in accordance with **(Arafa et al., 2023)** in Japanese who found that 39.5 % of participant reported that life satisfaction with sleep was inversely associated with the risk of atherosclerotic cardiovascular disease (ASCVD) in the investigated general Japanese population.

From the investigator point of view this due to the severity of the disease.

Related to psychological health quality of life domains among the studied participants. This study showed that more than two thirds of participants are a very much able to concentrate. This finding was in accordance with **(Freak-Poli et al., 2021)** in Australia who conducted a study entitled "Social isolation, social support and loneliness as predictors

of cardiovascular disease incidence and mortality" who found that 70% of participants are healthy elders and able to concrete.

Concerning social relation quality of life domain this study showed that more than one third of participants had a moderate amount of satisfaction with personal relationships and satisfaction with friends' support. This result was in agreement with **(Hu et al., 2020)** who found that 70% of participants have an absence of social satisfaction.

From the investigator point of view this due to decrease relationships with friends, family, the wider community and social support because of the economic problem the family have today.

On the other hand, this result was in disagreement with **(Kim et al., 2021)** in Korea who found that 67.7% of participants met with their close friends more and this increase their social satisfaction.

Concerning environmental health quality of life domain this study revealed that more than one half of participants were very much feel safe in daily life. This result was in agreement with **(Tornero-Quiñones et al., 2020)** in Spain who found that 53.7 % are risk for fall and aren't safe in their life.

According to the researcher, this is because aging causes physiological changes in the musculoskeletal system. However, this finding contradicted that of a Korean study (**Kim et al., 202**1), which revealed that 80% of individuals are content and secure in their surroundings.

This study revealed that more than two-thirds of the participants had moderate quality of life. The second research topic, which explored the quality of life for older adults with cardiovascular disorders in rural locations, was revealed and validated by the aforementioned findings**.** This result was in agreement with **(Chatzinikolaou et al., 2021)** who found that 66% of participant reported that quality of life of participants is affected by factors such as age, type of heart disease and the heart failure group had a significantly lower quality of life than the other heart diseases.

According to the investigator, this is because they are more dependent on their everyday activities.

This study indicates that there was a significant relation between studied participant's total knowledge score and their age, educational level, and the status of living. The aforementioned findings revealed and validated the third study question, which inquired about the connection between older adults' sociodemographic traits and their level of knowledge. Result was in accordance with **(Bdair, 2021)** in Kingdom of Saudi Arabia who found that there was a relation between patients' age and level of education on the level of knowledge with such a large age span. Comparison of knowledge scores according to gender revealed that women had more knowledge than men. From the perspective of the researcher, this is because older adults may possess knowledge based on their prior experiences and education from their providers. Information, particularly health messages conveyed through various mass media platforms, is easier for educated people to understand.

On the other hand, this finding was similar with **(Liu et al., 2020)** in Birmingham who found that the lower CVD knowledge level has no relation with older age, lower income, and lower educational level.

This study revealed that there was no statistical relation between total knowledge score of participants and their gender, social status, occupation, and monthly income. This finding was similar to **(Abate et al., 2020)** in Ethiopia who conducted a cross-sectional study" who found that there was a relation between knowledge of participants and their age and social status.

On the other hand, this result was in disagreement with **(Muhihi et al., 2020)** in Tanzania who found that there was no relation between knowledge score of participants and their gender, social status. Knowledge of both risk factors and warning signs was higher among men compared to women.

This study revealed that that there was a significant relation between studied participant's total quality of life score and their age, gender, educational level, and occupation. The aforementioned findings revealed and validated the third study question, which inquired about the connection between senior citizens' sociodemographic traits and their quality of life. This result was in agreement with **(Saqlain et al., 2021)** in Pakistan who found that there was a relation between age, occupation and quality of life of elderly patients with cardiovascular diseases.

Conclusion

Based on the results of the present study, it can be concluded that:

More than two thirds of the elderly people had poor total knowledge regarding cardiovascular disease. More than two thirds of the elderly people with cardiovascular disease had moderate quality of life. There was a significant relation between studied participant's total knowledge score and their age, educational level, and the status of living with ($p< 0.05$*). Finally, there was a significant relation between studied participant's total quality of life score and their age, gender, educational level, and occupation ($p< 0.05$*). This results achieved the study aims and supported the research questions.

Recommendations

Based on the results of the present study, the following recommendations are suggested:

Recommendation to elderly people:

1- Health education programs should be developed and implemented for elderly to educate them about cardiovascular disease with the most current information and practices about their quality of life.

2- Simple booklets should be available and distributed to all elderly about cardiovascular disease and it is impact on quality of life.

3- Continues encouragement of the elderly people to continue follow up for cardiovascular disease.

4- Using different health education methods such as video, pictures, TV, box and magazine.

Recommendation to researcher:

1. To get more generalized results, it is advised that the study be replicated on a sizable sample drawn from various regions of Egypt.

2-further research studies are needed to focus on studding factors aggravated cardiovascular diseases on old age.

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