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EFFECT OF SAFE HOME ENVIRONMENT ON QUALITY OF LIFE OF ELDERLY WITH CARDIOVASCULAR DISEASES IN RURAL AREA

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Abstract: **Quality of life refers to the patient's ability to enjoy normal life activities, the nature of the home and the environment surrounding can affect the shape of life, carried out by the elderly with heart disease. Aim of the Study: was to assess the effect of safe home environment on QOL of elderly with CVD in rural area. Design: a descriptive, analytic design was used. Setting, the study was conducted at Fayoum villages (Arabs - Damu - Hadaqa - Mandara) Sample: A convenient sample was used in this study. The number of elderly with cardiac diseases was 130. Tools: 1) An interviewing questionnaire, 2) An observational checklist to assess safety environment,3) Medical record review and 4) the Arabic WHOQOL-BREF questionnaire. Results: the mean age of elderly was 71±8.60. A total quality of life of the elderly with cardiac diseases is unsatisfactory. There was highly significant relation between home environment and health related quality of life. Conclusions: The heart conditions score were statistically significant higher among elderly with poor physical status (p value <0.05), and show unsignificant differences of quality of life as regards (physical, household, social, psychological, and spiritual status), and home environment. The study show that total quality of life were significant differences among cardiac diseases of elderly with moderate satisfactory heart condition (p value<0.05. Recommendations: organization of health educational programs for elderly and other health care providers in rural area focusing on how to improve the home environment, effective-manage daily living, and more quality of life coping .**

Keywords: **Elderly, Home environment, Quality of life, Cardiovascular disease.**

1. INTRODUCTION

The elderly were defined as 60 years old and above and there are many security changes of physiological, social, environmental, psychological and spiritual associated with age. The number of elderly people is growing year by year to become a phenomenon of aging facing many countries of the world. The World Health Organization (WHO) predicts that the number of elderly will be 1. 2 billion and 2 billion elderly in 2025 and 2050, respectively.[1]

In Egypt; the percentage of elder people in 2006 was 7.2%, and 8.9% in 2016, while expected to rise to 10.9% in 2026[2]. The Central Agency for Public Mobilization and Statistics (CAPMAS) showed in its report that the number of elderly people during the year 2015 was 6 million, including 3 million males and 3 million females[3]. This figure is expected to rise to 11.5% in 2031 according to population estimates on 1 July 2015. For the elderly (60 years and older) - Survival at birth according to type 71.5 years (70.1 years for males, 72.9 years for females) during 2016.[3,4]

Rural population (% of total population) in Egypt was reported at 56.67 % in 2017, according to the World Bank collection of development indicators, while the rural population of Fayoum is 77.5% of the governorate's population[6]. Egypt faces a major challenge in delivering health care to rural areas as well as social welfare, and facilitates access to them.[8]

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Cardiovascular diseases (CVDs) are the number 1 cause of death globally: an estimated 17.9 million people died from CVDs in 2016, representing 31% of all global deaths [7]. Of these deaths, 85% are due to heart attack and stroke. Over three quarters of CVD deaths take place in low- and middle-income countries[7]. CVDs is a broad term used to describe a range of diseases affecting the heart, and include various diseases that fall under the umbrella of heart disease: Cardiovascular disease, Arrhythmia, Diseases of birth defects of the heart, Myocardial infarction, Heart disease caused by inflammation of the membranes of the heart, Heart valve diseases[6]. Cardiovascular disease causes narrowing or obstruction of blood vessels, preventing blood from reaching the heart, brain, or other parts of the body, causing chest pain (angina), Shortness of breath, Numbness in the legs and arms, edema of the legs, Stress, ascites, Pallor, coma, and death.[7]

The concept of quality of life has regarded as the outcome of advantages and disadvantages experience cover the course of life, which in turn in shaped by the larger social, cultural, legal, economic, and historical context [10]. Given the complexity of the concept and the existence of different disciplinary perspectives, it should not come as a surprise that there is little consensus about how to conceptualize and measure quality of life, and there is no comprehensive theoretical model. Measures have typically included a series of life domains: physical, emotional, social, environmental, and material [7, 11].

As mentioned by *Braunwald et al., (2010),*[12] that the nurse is a vital member of the comprehensive cardiac disease care program and educates the elderly about a number of issues important for optimal activity and how to manage daily living, both functionally and psychosocially. As well, the most effective treatments empower the elderly clients to be effective self-manager. To effective-manage daily living or cardiac patient, the elderly needs knowledge, resources and psychosocial coping skills and risk factor – modifying activities[8].

Nursing seeks to take preventive measures and societies management to give the elderly a quality of life that makes their lives enjoyable and comfortable by analyzing the needs of the elderly and the surrounding environment. 9To find out the positive relationship to strengthen it and the negative relationship to modify it[5].

Significance of the study

The rural community in Egypt is very important. The population of the country, where 55% of Egypt's population lives. The Egyptian countryside is always suffering from higher poverty rates than urban areas, which makes it difficult to obtain health, social and environmental services. Which affect the individual's life and increase disease. older people at risk for losing independence, establishing guidelines and identifying interventions to alter the risk or to provide public health services to manage increasing dependence. It also, focuses on physical function related to the ability to perform activities of daily living and instrumental activities of daily living[9,10].

Aim of the Study

The aim of this study assess the effect of safe home environment on quality of life among elderly with heart disease in rural area.

Research Questions:

1. What is the effect of heart diseases on physical status?
2. Is there any effect of heart diseases on psychological and social status?
3. What is the quality of life among elderly in WHOQOL-BREF domains?
4. What are the relation between socio-demographic characteristics of elderly client and heart diseases?
5. What is relation between safety environment and quality of life?

2. SUBJECTS AND METHOD

Research design:

A descriptive, correlation design was used in carrying out this study.

Setting:

The present study was conducted in outpatient clinics for heart disease at Fayoum General Hospital and home visit Fayoum villages (Arabs - Damu - Hadaqa - Mandara)

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Sampling: A convenient sample of 130 older adults diagnosed with cardiovascular diseases and attending the above mentioned setting and fulfilling the following criteria:

- Older adults (age 60 years or above),
- Diagnosed with cardiac diseases,
- Agreement of clients to visit their home and participate in the study by written consent.

The sample size was estimated using the online creative research systems sample size calculator website[34]; population size: 1005 over six months, acceptable error: 5%, confidence coefficient: 95%, the percentage of sample: 91%, the required sample size was equal 120 elderly reached to 130 to pilot study.

Data collection tools:

Tool I: An interviewing questionnaire was used to assess socio demographics. It was designed by the researcher based on literature review:-

a. Socio demographic characteristics for elderly clients with cardiac diseases. It included questions about gender, age group, living place, and social status, level of education, job, income and smoking.[13]

b. **Medical history** included data collected from medical record review such as diagnosis, treatment regimen, evaluation of Client heart condition [14]:-

- Associated chronic diseases: presence of hypertension with any chronic disease consider the condition bad but presence of hypertension only or other chronic disease the condition was moderate.
- Duration of disease: clients had disease from 10 – 15 years and more was bad condition, less than it was moderate condition.
- Complain during attack: clients complained of more than two symptoms as (chest pain with breathing tightness and with heart beat problems) condition was bad but one symptom was moderate.
- Number of attack in month: clients had more than two attack was bad condition and less than it was moderate.
- Pain: patients had continuously pain had bad condition, but when pain had rarely or sometimes, was moderate.
- Having pain: clients had pain after angry or after work was moderate condition pain during sleep or at any time considered bad condition.
- Severity of pain: clients had severe and unlikely pain, was bad condition but clients had potential pain or simple pain was moderate.
- Duration of pain: clients had pain extended from 10 – 15 minute and more was bad condition, but clients had less 10 - 15 minute was moderate condition.
- Type of pain in chest: clients complained from tingling, squeeze, pressure and heaviness. The condition was bad but clients complained from one or two symptoms was moderate condition.
- Number of entry to hospital due to diseases during last year. Clients enter hospital more than two times condition was bad, less than it or never enter was moderate condition.

Tool II: An observational checklist to assess safety environment:

This tool was prepared to assess home environment of elderly clients. This researcher filled it during home visits. It comprised the following parts:

a) **Characteristics of housing**: these include covering space and security (separate or shared), structure and material, water supply, location of water supply, sewage disposal, floor, number of rooms, and crowding index, place of cooking and the kitchen, cooking facilities availability of electricity, cleanliness and ventilation, bath room cleanliness [14].

b) **Other variables about house**, these comprised closed and open-ended questions covering methods and disposing wastes, presence of insects and rodents and source of water[15].

c) **Room furniture**. It included cupboard, bed, desk, chair, table and carpenter.

Scoring system:

Score was assigned 1 if the home condition is not safely, 2 if safely.

Tools III: Medical record review such as:- diagnosis, treatment regimen, methods of prevention of risks to avoid complication – such as constipation, obesity and smoking. Medical history for elderly clients with cardiac diseases which include questions about associated chronic diseases, complain during attack, duration of disease, umber of attack during the month, medications, type of pain in the chest, number of entry (admission) to hospital during the last year and source of information about disease.

Tool IV: The Arabic WHOQOL-BREF questionnaire, [16] which was translated and validated

It consists of 26 questions, 24 of which are divided into four domains: physical health (perception of the individual regarding one's physical condition, 7 items), social relationships (perception of individual social relationships and social roles adopted in life, 3 items), environment (perception of the individual regarding diverse aspects related to the environment in which one lives, 8 items) and psychological health (perception of individual affective and cognitive condition, 6 items). The remaining two questions measure self-perceived QoL and satisfaction with health. All questions are rated on a 5-point Likert scale (1=very bad/strongly dissatisfied to 5=very good/strongly satisfied). Additional variables were added to assess socio-economic, demographic and health conditions of the elderly.

Data collection was carried out by 15 undergraduate nursing female students from the Faculty of nursing.

Procedure for Data Collection

• **Study period**: This study was conducted during the period starting from January to the end of June 2018.

• **Approval:** an official permission to carry out the study was obtained from the responsible authorities; faculty of Nursing, Fayoum University, by the researcher to the administrator of Fayoum General Hospital , where the data were collected to conduct the study after an explanation of the purpose of the study.

• **Ethical consideration**: protection of nurse's rights, written consent was obtained from the participants to share in the study, the researchers initially introduced themselves to all participants. They were informed about aim of the study and what was expected of her. Each participant was notified about the right to refuse to participate in the study, before taking her verbal consent.

• **Tools development**: **Validity**; the questionnaire was reviewed for content validity by a five of experts (3 from in geriatric nursing and 2 from family and community health nursing). **Reliability**: The internal consistency of the questionnaire was calculated using Cronbach's alpha coefficients. Test-retest was used. The Cronbach's alpha of the questionnaire was between 0.95 indicate good reliability, "indicating that data collected through this questionnaire were reliable".

• **Pilot study**, a pilot study was conducted on 10 of the study sample to evaluate the developed tools before starting the actual data collection. Based on the results of the pilot study, modifications, clarifications, omissions, and rearrangement of some questions were done. It also helped to estimate the time needed to fill in the questionnaire. And these were excluded in the sample to ensure stability of the answers.

• The time taken for every questionnaire to be completed was about 20-30 minutes for each elderly.

Statistical Analysis

The collected data were revised, organized, tabulated and statistically analyzed using Statistical Package for Social Sciences (SPSS) version 20 for windows. Frequency, percentage, and Odds Ratio (OR) were the statistical methods used in the analysis of data. The significance of OR was the 95% Confidence Interval (CI) or the 95% Exact Confidence Limits (ECL)

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3. RESULTS

Socio demographic characteristics of elderly clients

Table (1) As regard the relation between socio demographic characteristics of elderly clients and heart diseases condition. The table shows that 48.6%of females have poor condition

The study results showed that 60.0% of the elderly clients with cardiac diseases were females, with a mean age of 71±8.60; years; and 43.3% of them were illiterate, 16.7% were single, and54.2% were not working, 66.7% of them had sufficient income, And 58.3% were nonsmoking, while (41.7%) of the sample were smoker.

Table (2): This table reveals that the total quality of life of the elderly clients with cardiac diseases is unsatisfactory.

Table (3): Quality of life and feeling satisfaction with health according to gender. The mean score (SD) for self-perceived satisfaction and physical health was 3.4 (0,0) and 0.5 (5.2), respectively. The mean score for social relationships was comparatively higher than the remaining three domains 60.4 (15.3). Females reported a higher score than males for both the overall QOL and perceived satisfaction with health. However, statistical significance was only for satisfaction with health (P=.03). On the four domains of QOL, males reported higher scores for physical and social relationships, but only the physical health domain (P=.031) was statistically significant

Table (4) shows that the home environment of the elderly clients with cardiac diseases was generally moderate in all items. About18.3% of **drinking** water was unsafe, 96.7 % of ventilation was safe, while 36.7% un safe of **noise** outside the home, 98.3% safe for noise inside the home, 0.8% unsafe for furniture, about 70.0% safe for **lighting**.

Table (5) as regard the relation between socio demographic characteristics of elderly and heart diseases condition: The table show that 48.6% of females have poor condition, However no statistically significant differences were detected between elderly heart condition and their gender, level of education, job, income, and smoking ($p > 0.05$) in which statistically significant difference were detected by age and marital status ($p < 0.05$).

Table (6) This table shows that heart conditions score were statistically significant higher among elderly clients with poor physical status (p value <0.05), and shows that heart diseases scores were significantly higher according to social status of heart diseases of elderly clients, and shows that heart diseases scores were unsignificant differences according to psychological status and perceived satisfaction status of heart diseases of the elderly clients.

Table (7): This table shows unsignificant differences of quality of life as regards physical, house hold, social, psychological, and spiritual status.

4. DISCUSSION

Caring for cardiac disease elderly is a complex process, which requires the cooperation of all primary care professionals and their interaction with a large number of multi disciplines and health care personnel of different organizations ***(Indranill., 2014).***[17] In addition, health care providers have sought to improve health outcomes through patient empowerment ***(*Hayman, *2014)*** [18]**.** It was a challenge for both elder and family in preventing and managing cardiac diseases. It is also increasingly accepted that the public (as individuals, communities and the voluntary sector) should be involved in designing, delivering and evaluating services for cardiac diseases and in creating the conditions to support healthy living ***(Mytton et al., 2018).***[19]

Socio-demographic characteristics of elderly clients with cardiac diseases: this study shows that less than two-thirds of them were females, while more than one-thirds was males. This finding was in accordance with that of the study carried out by (***Essam et al., 2018)*** [20] on elderly " **Coronary Artery Disease among Elderly Egyptian Patients** ". It indicated that females which had this age (60years and more) more than males.

The results of the present study revealed that more than three-fifth of elderly clients were widow, more than two fifth of them were illiterate and slightly less than one-third of them were read and write. These findings are in agreement with **(Hala *et al.*, 2017)** [21]**,** who in the study about elderly musculoskeletal, locomotors impaired and effect of balance disorders on activities of daily living in elderly in Egypt, identified that slightly more than half of the sample were illiterate and single.

The study has emphasized that washing dishes and cleaning the house done by the studied group require some help to complete it as detected by their attempt to do the task by more than one-third of elderly clients with cardiac disease regarding activities of daily living. This disagreed with the study done by (**Soong *et al., 2019)*[22],**on that "functional status was assessed by evaluating activities of daily living for elderly living in Korea and found that in the study more than half of the sample required moderate help to complete this task.

The study showed that slightly more than two thirds of clients with cardiac disease was dependent in cooking and preparing meals (food preparation) (.This finding disagree with the study carried out on elderly "assessment of functional health status" in Cairo by ***Soliman, (2007).***[23]The study has reported that, the majority of studied group was independent in ascending stairs and home maintenance but dependent in less than half in ability to food preparation. These results are incongruent with ***Jack et al., (2013)*[24],** who carried out a study on functional decline in older adults in the United States, and developed a validated tool for measuring early decline in functional status in subjects who didn't report difficulty in activities of daily living by a measure of task modification.

The current study indicated that half of the sample was never practicing hobbies, practicing sport. These results disagreed with ***Soliman (2007),*** as it she found in her study, that the entire studied group was moderate in practicing hobbies, personal interests and employment regarding personal activity.

Concerning the psychological and spiritual domain of the quality of life of elderly clients with cardiac diseases, the result showed that more than half of the studied sample have never feel puzzled about the future, more than one third of them never feel that have goal in the future and less than one fifth of them never participate in recreational programs, more than one third of them always caring toward general health, more than half of sample always like to listen to health program related to elderly, and more than half of them never take any medication without a prescription. These results are consistent with ***(Supa et al., 2015)*** [25],who found in their study about quality of life of adults with chronic illnesses of Primary Care Patients in Cambodia, that more than half of the studied sample have always feelings of hopelessness, one third have problems in mental concentration and one third have feeling of self-interest. However, two thirds of their studied sample has never suffered from side effects of treatment.

Concerning the social domain of the quality of life of elderly clients with cardiac disease finding of this study revealed that about one third of the studied sample always participate in general events (wedding-death visit patients), and less than one third always visiting friends. These result are consistent with **Tu *(2016),*** who found in the study about quality of life of persons with spinal cord injury living in Taipei, that more than half of the studied sample always have spiritual relationship with family, while one third them reported that sometimes the disease and treatment affect their daily living. Because of the strong family ties between rural communities

The present study results revealed that all of the elderly client's homes were safely in noise inside the home; these findings are on line with **Krieger *(2012),***[27] who found in the study, worst items in home environment as in door noise in more than three fourths of homes. Accidents inside the house are one of the common causes for death among the elderly. Injuries due to accidents are a serious public health problem in rural homes as in any other areas. Meanwhile, injuries in these homes are considered the most frequent cause for death among the elderly.

Results of this study show that more than half of females have moderate heart condition, with no statistically significant differences between client's heart condition and their gender, living place, education level, job, income and smoking. As well moderate heart condition is more in non-smoking people. These findings show the total quality of life were statistically significant among cardiac diseases of elderly with moderate heart condition. The current study shows that heart conditions score were statistically significant higher among elderly clients with poor physical status (p value <0.05), this finding is in contrast with **CDC (2017)**[28] who reported in Healthy Aging: Promoting Well-being in Older Adults, that 35% of people over age of 65 had fair or poor physiological health.

The current study shows that heart diseases scores were significantly higher according to social status of heart diseases of elderly clients, and shows that heart diseases scores were no statistically significant differences according to psychological status and spiritual status of heart diseases of the elderly clients. These results are in-consistent with (**Neika, 2019**)[29] who

found in his study, the Differential Impact of Social Participation and Social Support on Psychological Well-Being that old age with retirement provide freedom from the time demands and daily structure of work life to pursue other interests and activities at a relaxed pace. Also, **Shiri and Perla (2018**) [30] who found in the study, Subjective Age and Its Correlates Among Middle-Aged and Older Adults. added that old age with retirement provides an opportunity to pursue personally fulfilling interests that can result in renewed feelings on self – worth. Moreover , **Doo et al., (2018)**[31] in the study entitled, Mediating Role of Career Coaching on Job-Search Behavior of Older Generations. Emphasized that behaviors of old age, such as pursuing interests, hobbies and activities are crucial, where they experience meaning, purpose, and growth. Meanwhile, **Okasha (2012**)[32] who found in the study, Quality of Life and Personality Dimensions in Egyptian, stated that the importance of viewing old age as a major source of experience, wisdom, and support to their families and societies, who should be valued and respected.

The current study showed that, no statistically significant differences of total quality of life as regards home environment scale. This finding is in agreement with ***Alessandra (2018***) [33] who find in the study about indoor air quality and health, quality of life depends on the indoor and outdoor conditions and spatial characteristics of villages, towns and cities based on quality of housing and basic infrastructure and services. Traditional hazards related to poverty and insufficient developments include: lack of access to safe drinking – water, inadequate basic sanitation in the house hold and the community, and inadequate solid water disposal. Heavily implicated are the manner in which household wastes and sewage are handled, and the conditions in which people live and work. More than 1 billion people do not have ready access to adequate and safe water supply, and a variety of physical, chemical and biological agents render many water sources unhealthy, most of those un-served live in rural areas. The results of the research reflect the development of services in rural Egypt and the government's efforts to provide services and make the environment healthy for the livelihood of farmers and rural residents.

5. CONCLUSIONS

- The study and research questions show that slightly less than half of females have poor condition, However no statistically significant differences were detected between client heart condition and their gender, living place, level of education, job, income, and smoking ($p > 0.05$) in which statistically significant difference were detected by age ($p < 0.05$).
- The study show that heart conditions score were statistically significant higher among elderly clients with poor physical status (p value <0.05), and show that heart diseases scores were significantly higher according to social status of heart diseases of elderly clients, and show that heart diseases scores were no statistically significant differences according to psychological status and spiritual status of heart diseases of the elderly clients.
- The study show no statistically significant differences of quality of life as regards (physical, house hold, social, psychological, and spiritual status), and home environment.
- The study show that total quality of life were statistically significant differences among cardiac diseases of elderly clients with moderate satisfactory heart condition (p value<0.05).

6. RECOMMENDATIONS:

Based on the finding in study the recommendation:

- There is an urgent need to assessment of elderly home Emphasizing the importance of raising awareness for the elderly, that will consequently improve their physical condition and their ability to perform daily living activities and possible changes to the environment
- Cardiac rehabilitation and follow up programs are very important for all elderly clients to avoid falling in problems.
- Early detection and management of elderly related to QOL, functional capacity may improve the effectiveness of physical therapist and encourage person's participation in the life.

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Table (1): distribution of socio-demographic characteristics of elderly client with heart diseases (N =120).

socio-demographic characteristics		Heart Conditions			
		Poor		Moderate	
		No.	%	No.	%
Gender	Male	24	0.0	24	50.0
	Female	35	8.6	37	51.4
Age(years)	60 -	8	3.3	16	66.7
	65 -	13	3.3	26	66.7
	70 -	10	0.0	10	50.0
	75 -	14	7.8	4	22.2
	80 or more	14	3.7	5	26.3
Marital Status	Single	10	0.0	10	50.0
	Married	9	9.0	22	71.0
	Widow	37	3.8	21	36.2
	Divorced	3	7.3	8	72.7
Education Level	Illiterate	28	3.8	24	46.2
	Read and Write	12	8.0	13	52.0
	Primary	3	7.3	8	72.7
	Intermediate	11	5.0	9	45.0
	High education	5	1.7	7	58.3
Job	Housewife	21	0.0	14	40.0
	Businessman	4	6.7	11	73.3
	Pension	11	7.9	18	62.1
	Not working	23	6.1	18	43.9
Monthly Income	Sufficient	42	2.5	38	47.5
	Insufficient	17	2.5	23	57.5
Smoking	NO	32	5.7	38	54.3
	Yes	27	4.0	23	46.0

Table (2): Distribution of elderly clients with cardiac disease regarding to their total quality of life (no-120).

Quality of Life Scale	Dissatisfied		Satisfied	
	N	%	N	%
Physical status	33	27.5	87	72.5
Environmental	86	71.7	34	28.3
Social relation	86	71.7	34	28.3
Psychological status	88	73.3	32	26.7
Self-perceived satisfaction	73	60.8	47	39.2
TOTAL Quality of Life	79	65.8	41	34.2

Table (3): The mean differences of QOL elderly in WHOQOL-BREF domains

Quality of Life Scale	Total N=120		Male N= 48		Female N= 72		T	p-value
	mean	SD	mean	SD	Mean	SD		
Physical status	0.5	5.2	63.2	6.6	58.5	13.9	.056	**.031**
Environmental	60.5	12.5	60.3	14.0	60.6	11.4	.032	.903
Social relation	60.4	15.3	67.3	5.5	63.8	5.2	0.857	.137
Psychological status	63.5	2.4	6.6	2.9	62.6	2.0	0.246	0.101
Self-perceived satisfaction	3.4	.0	.3	.2	3.6	.9	-2.181	**.030**
TOTAL Quality of Life	3.3	.1	.2	.1	3.3	.0	-1.162	.246

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Table (4): Distribution of elderly client with cardiac disease according to their home environment (N =120)

Assessment of home environment of the elderly with cardiac diseases	Not safety		Safety	
	No.	%	No.	%
Ventilation	4	3.3	116	96.7
Drinking water	22	18.3	98	81.7
Lighting	36	30.0	84	70.0
Noise outside the home	44	36.7	76	63.3
Noise inside the home	2	1.7	118	98.3
Sanitation	0	0.0	120	100.0
Flooring	0	0.0	120	100.0
Furniture	1	0.8	119	99.2
Stairs and roads	0	0.0	120	100.0

Table (5): Relation between socio-demographic characteristics of elderly client and heart diseases conditions (No=120).

socio-demographic characteristics		Heart Conditions		Chi-squared	P-Value
		Poor	Moderate		
		NO. (%)	NO. (%)		
Gender	Male	24 (50.0)	24 (50.0)	0.020	0.881
	Female	35 (48.6)	37 (51.4)		
Age(years)	60 -	8 (33.3)	16 (66.7)	16.800	0.002*
	65 -	13 (33.3)	26 (66.7)		
	70 -	10 (50.0)	10 (50.0)		
	75 -	14 (77.8)	4 (22.2)		
	80 or more	14 (73.7)	5 (26.3)		
Marital Status	Single	10 (50.0)	10 (50.0)	12.100	0.007*
	Married	9 (29.0)	22 (71.0)		
	Widow	37 (63.8)	21 (36.2)		
	Divorced	3 (27.3)	8 (72.7)		
Education Level	Illiterate	28 (53.8)	24 (46.2)	3.120	0.538
	Read and Write	12 (48.0)	13 (52.0)		
	Primary	3 (27.3)	8 (72.7)		
	Intermediate	11 (55.0)	9 (45.0)		
	High education	5 (41.7)	7 (58.3)		
Job	Housewife	21 (60.0)	14 (40.0)	6.935	0.074
	Businessman	4 (26.7)	11 (73.3)		
	Pension	11 (37.9)	18 (62.1)		
	Not working	23 (56.1)	18 (43.9)		
Monthly Income	Sufficient	42 (52.5)	38 (47.5)	1.070	0.302
	Insufficient	17 (42.5)	23 (57.5)		
Smoking	NO	32 (45.7)	38 (54.3)	0.800	0.371
	Yes	27 (54.0)	23 (46.0)		

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Table (6): The effect of heart diseases on quality of life domains (No=120).

Quality of life domains			Heart Conditions		Chi-squared	P-Value
			Poor	Moderate		
Physical status	Unsatisfactory	N	24	9	10.109	0.001*
		%	2.7	27.3		
	Satisfactory	N	5	52		
		%	0.2	59.8		
Household chores activities	Unsatisfactory	N	7	39	3.650	0.056
		%	4.7	45.3		
	Satisfactory	N	2	22		
		%	5.3	64.7		
Social	Unsatisfactory	N	8	38	5.366	0.021*
		%	5.8	44.2		
	Satisfactory	N	1	23		
		%	2.4	67.6		
Psychological status	Unsatisfactory	N	6	42	1.274	0.259
		%	2.3	47.7		
	Satisfactory	N	3	19		
		%	0.6	59.4		
Spiritual status	Unsatisfactory	N	0	33	2.362	0.124
		%	4.8	45.2		
	Satisfactory	N	9	28		
		%	0.4	59.6		

According to research question No:4 Are there relation between the safety environment and quality of life of client with heart diseases?

Table (7): Relation between safety environment and quality of life

Quality of life domains			Home Environment Scale		Chi-squared	P-Value
			Poor	Moderate		
physical status QL Scale	Unsatisfactory	N	13	20	0.070	0.792
		%	39.4	60.6		
	Satisfactory	N	32	55		
		%	36.8	63.2		
Household chores QL Scale	Unsatisfactory	N	32	54	0.011	0.917
		%	37.2	62.8		
	Satisfactory	N	13	21		
		%	38.2	61.8		
social QL Scale	Unsatisfactory	N	30	56	0.886	0.346
		%	34.9	65.1		
	Satisfactory	N	15	19		
		%	44.1	55.9		
Psychological status QL Scale	Unsatisfactory	N	30	58	1.636	0.201
		%	34.1	65.9		
	Satisfactory	N	15	17		
		%	46.9	53.1		
Perceived satisfaction QL Scale	Unsatisfactory	N	29	44	0.394	0.530
		%	39.7	60.3		
	Satisfactory	N	16	31		
		%	34.0	66.0		

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