Effect of Educational Program for patients with Angina Pectoris on Their Quality of Life

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Abstract**:** Angina is chest pain and discomfort caused when heart muscle doesn't get enough oxygen-rich blood. It may feel like pressure or squeezing in chest. The discomfort also can occur in patient's shoulders, arms, neck, jaw, or back. Angina pain may even feel like indigestion. This usually happens because one or more of the coronary arteries is narrowed or blocked. **Aim of the study:** The aim of this study was to evaluate the effect of educational program for angina pectoris patients on their quality of life through **Methods: A quasi-experimental research design** was utilized to conduct the aim of this study .This study was conducted in coronary care unit (CCU) at Benha University Hospital .**Sample:** Fifty patients will randomly taken from the total number of patient population admitted to cardiac care unit . **Three tools** were used to collect data (1) Structured interviewing questionnaire sheet, (2) The World Health Organization quality of life questionnaire. **Results:** of the study showed that statistical significant improvement in the total mean knowledge scores of patients post implementing the program as compared to pre implementing period. Also there was statistical significant improvement in the quality of life of patients post implementing **Conclusion:** Finding of this study revealed that The post mean know1edge scores of patients with angina pectoris who were exposed to educationa1 program were higher than their pretest know1edge mean scores. **The study recommended** that there is There is a need for continuous monitoring and eva1uating Qo1 of angina pectoris patients to ear1y detecting and so1ving any prob1ems.

Key Words: Angina pectoris, Quality of life

Introduction

Heart disease risk factors are often correlated with the patient's behavior and knowledge that as one vital means of improving the patient's quality of life not only majorly improves the behaviors such as smoking, improved level of tolerance and physical activity an submission of medical recommendations, but also saves in the costs of prevention and treatment . Physical illness is a multifaceted phenomenon that includes biological, psychological, social, environmental, familial, psychosocial and psychosexual factors. It is an existential crises involving issues of identity and daily life **(Kenneth, 2017).**

Angina is chest pain or discomfort as a result of inadequate oxygen rich to the heart muscle . It may feel like pressure or squeezing in chest. The discomfort also can occur in patients shoulders, arms, neck, jaw, or back. This usually happens because one or more of the coronary arteries is narrowed or blocked. It may be accompanied by breathlessness, sweating, and nausea in some cases, the pulse rate and the blood pressure increases. Typical locations for referred pain are arms (often inner left arm), shoulders, and neck into the jaw **(White,2018).**

There are many types of angina such as ***stable angina*** which refers to chest pain occurring intermittently over a long period with the same pattern of onset, duration, and intensity of symptoms. Pain usually lasts for only a few minutes (3 to5 minutes). Pain is manifested on exertion, emotional stress and is relived with rest or nitrates, ***unstable angina*** which is considered the second most common type that represented a dangerous condition which requires emergency treatment. It occurs at rest (or with minimal exertion), usually lasting >10 min, more severe, and prolonged than before ***(NHLBI, 2017).***

Variant angina angina which refers to angina that occurs at rest, as a result of coronary artery spasm. It occurs more frequently in women. There is a ST segment elevation on the electrocardiogram (ECG) during the pain ***(NHLBI 2017).***And also **nocturnal angina,** that Occurs at night and may wake the patient from sleep it can be provoked by a vivid dream. it tends to occur in patients with critical coronary artery disease (**kumar&Clark, 2017).Angina decubitus:,** Is a paroxysmal chest pain that occurs when the client sits or stands up, **silent ischemia,** Objective evidence of ischemia (such as electrocardiography changes with a stress test), but a patient reports no symptoms

and Post infarction angina:, Is a chest Pain occurs after MI, when residual ischemia may cause episodes of angina **(Black& Hokanson, 2018).**

Major risk factors for angina include cigarette smoking, diabetes, high cholesterol, high blood pressure, sedentary lifestyle, and family history of premature heart disease. Identifying and treating risk factors for further coronary heart disease is a priority in patients with angina (**March,2017).**

The pathophysiology of unstable angina is the reduction of coronary flow due to transient platelet aggregation on apparently normal endothelium, coronary artery spasms, or coronary thrombosis. The process starts with atherosclerosis, progresses through inflammation to yield an active unstable plaque, which undergoes thrombosis and results in acute myocardial ischemia, which, if not reversed, results in cell necrosis **(Schmidt, 2017)**

Not all conditions that lead to angina can be reversed, but treatments can improve the signs and symptoms and help the patient live longer. Their Lifestyle changes, such as exercising, reducing salt in your diet, managing stress and especially losing weight, can improve patients quality of life. The best way to prevent angina is to control conditions that cause angina , such as coronary artery disease, high blood pressure, diabetes or obesity **(Papadakis, 2017).**

Quality of life (QoL) is defined by World Health organization ***(WHO ,2018)***, as individuals perceptions their position in life in the context of culture and value systems in which they live and relation to their goals, standards, and concerns .It is aboard ranging concept affected in a complex way by the person physical health, psychological state ,level of independence ,social relationship ,personal beliefs and their relationship to their environment. Quality of life also reported by**(Stone,2017)** as the degree of well-being felt by an individual or group of people. The quality of life measures the difference ,or gap at a particular period of time between the hopes and expectation of the individual and that individual's present experiences **.**

Quality of life is a boarder concept than personal health status , it involves four dimensions. The first one is health and physical functioning , it includes activity level and mobility ,physical symptoms ,ability to take care of responsibilities . The second dimension is psychological and spiritual attitudes and responses ,which include satisfaction of life .Anxiety ,stress, self esteem, achievement of goals ,purpose in life ,spiritual aspects ,religion ,sense of

security and control over own life . The third dimension is social and economic involvement ,which focus on employment ,work ,education ,financial status ,friendship, social support and participation in recreational activites . The last dimension is family relation ship with spouse ,relationship with children and family happiness ***(Ibrahim ,2017)***

Patients who are not knowledgeable about their disease and medications are at a severe disadvantage , as reflected by higher rates of hospitalization and mortality. The educational program is **a vital component of care to improve the outcomes of patients with angina. Patients should play an active role in the management of their health. The effective role of nurse is an education of patients which emphasize on adherence to treatment, lifestyle recommendations, and help the patient to recognize the symptoms and signs that indicate progression of the disease (John,2018).**

The nurse should appraise the patient's current level of knowledge related to specific disease so patient will know signs and symptoms to report to health care provider. Describe common signs and symptoms of the disease so patient will know signs and symptoms to report health care provider. Instruct the patient and caregiver on measures to prevent/ minimize side effects of treatment for the disease so patient may be able to decrease number of acute episodes of anginia. Assess the patient's level of knowledge about prescribed diet to assess area needing additional instruction. Review patient's knowledge of medications to determine where further teaching is needed ***(Carpento-Moyet, 2016 and Lewis et al., 2017).***

Angina pectoris management requires many life style adjustments by patients and their families. Patients may need to make changes to their diet and daily activities that may conflict with their. cultural or their long term beliefs and desires. The consequence of this condition together with fear and feelings of being a burden on the patient and his family and can create many psychosocial problems and some degree of anxiety and depression ***(Packer, 2018).***

The goals of cardiac rehabilitation are mainly to improve symptoms and maintain functional abilities and bearing this points in mind, assist the patients in becoming an active partner in their own management of his/her angina pectoris, improve quality of life, reduce hospitalization and helping the patient to achieve independence ***(James, 2016 and Moseley, 2017).***

stated that the Goals of cardiac rehabilitation are to; increase exercise tolerance, improve symptoms such as shortness of breath and fatigue, improve blood level: nutritional education and counseling, behavioral interventions and exercise training improve the cholesterol levels, decrease smoking, improve psychological well-being and reduce stress, education, counseling, and psychosocial interventions, as well as exercise training, improve these outcomes, reduce mortality, comprehensive cardiac rehabilitation has been shown to reduce death rates in patients after angina pectoris attacks by 25% ***(Froelicher, 2017).***

Cardiac rehabilitation has both short and long term goals. The former included physical reconditioning sufficient for the resumption of activities , education of patients and family about the disease process and psychological support during the early recovering phase of illness. The later includes identifying and treating risk factors that influence the progression of disease , teaching and reinforcing the health behaviors that improve prognosis. Optimizing physical conditioning and facilitating return to occupational activities. Cardiac rehabilitation must be both comprehensive and individualized ***(Abduo, 2018).***

Aim of the study :

The aim of this study is to evaluate the effect of educational program for angina pectoris patients on their quality of life through :

1- determine the level of knowledge of the patients with Angina pectoris.
2- developing, implementing an educational program for patients' with angina pectoris .
3- Determine relationship between patients" knowledge and their quality of life.

Research Hypotheses:

The hypotheses to be tested in this study are:

H1- The post mean knowledge scores of patients with angina pectoris who are exposed to educational program will be higher than their pretest knowledge mean scores.

H2- The post mean quality of life scores of patients with angina pectoris who are exposed to educational program will be higher than their pre quality of life mean scores.

H3- There are a positive relation between patients' knowledge, quality of life and with their socio demographic characteristics .

Significance of the study :

Patients suffering from coronary artery disorder have no desired quality of life and their physical problems are considered as an effective factors on their quality of life such that these symptoms adversely influence the patients' socio-psychological and emotional dimensions **(Bischoff,2015)**. Also they may encounter some changes in family relationships, work, values, and in physical and social abilities, self-care; or in other word various dimensions of quality of life .Paying attention to the quality of life in patients suffering from angina pectoris decreases physical, mental, emotional and social restrictions of this disabling disease on patients**(Stone,2015)**.

In the United States, 10.2 million people are estimated to experience angina with approximately 500,000 new cases occurring each year. Angina is more often the presenting symptoms of coronary artery disease. The prevalence of angina rises. According to WHO reports, 35% of causes of death in the developing countries. The trend is promoted so far that it is predicted to be the major death factor by 2020 **(World Health Organization, 2015).** In Egypt, number of patient with angina is 1.4 million **(statistics by country for congestive heart failure, 2015).**

Also, by reviewing the medical records and statistical data of some health care settings in Egypt , demonstrated that on the duration of 2015-2016 , the number of patients admitted to CCU at Benha university hospital was 1112 patients.**(Benha university hospital statistic office,2015) .** So this study aims to evaluate the effect of educational program for angina pectoris patients on their quality of life .

Research Design:

Quasi-Experimental design was utilized to fulfill the aim of this study.

The methodology was portrayed according to the four following designs:

I. Technical Design.

The technical design includes setting, subjects and tool of data collection which used in this study.

A. Setting:

The study was conducted in cardiac care unit at Benha University Hospital.

B. Subjects:

Fifty patients were randomly taken from the total number of patient population admitted to cardiac care unit . It was according to power analysis using the program epi-info to estimate the sample size using the following parameters:

1- Population size 150
2- Expected frequency 50%
3- Maximum error 10%
4- Confidence coefficient 95%

Inclusion criteria:

1- Adult male and female patients with a diagnosis of angina pectoris.
2- Conscious patients .
3- Recent admission.
4- No associated medical or mental disease affecting their perception and willing to participate in the study.

Tools of data collection:

Three tools were piloted and used by the researcher to collect data through**:**

Tool 1 – Structured interviewing questionnaire sheet (angina pectoris patients profile &structured patients knowledge questionnaire)

This sheet was developed by the researcher . based on a thorough review of literature .It was include the following main parts:

Part I: Patients socio-demographic data sheet which include name, age, gender, educational level, living condition, marital status, occupation.

Part II : patient medical history which include history of the diseases ,times of hospitalization ,the present complain .

Part III: Patients' life style which include patients habits such as diet, fluids , elimination ,sleeping pattern , exercise and smoking.,

Part IV: assessing patients knowledge about their disease definition , signs and symptoms, contributing factors of chest pain ,methods to avoid chest pain , complications , nutrition ,smoking, sleeping pattern and exercise .

Scoring system

ALL knowledge variable were open end question ; they were scored as the following The patient don't know was given zero .The patient Aware of the basics given one grade .The patient has good perception given two grade .The patient has excellent perception given three grade .It was classified as the following satisfactory level equal or more than 60% of total score and unsatisfactory less than 60% of total score .

Tools 2 : The World Health Organization Quality of life questionnaire (WHOQOL):

This questionnaire was used to assess quality of life of the patients. Its adapted from **(*World Health Organization,1998)*** & adopted by the ***(El- sherbiny ,2010***). The WHOQOL was used to assess and measure change in quality of life associated with angina pectoris disease. It contains a total of 26 questions and four mains domain . Question from 1to 26 are rated on a five point scale (1-5) .Domain scores are scaled in apositive direction higher scores denote higher quality of life) . (i.e. 1= very dissatisfied , 2= dissatisfied , 3= neither satisfied nor dissatisfied ,4=satisfied ,5=very satisfied).

This tool includes twenty six items covering the following domains :

- Overall perception the quality of life and perception of health (questions from 1 to 2) with total score 10 .
- Physical health (questions number 3,4,10,15,16,17and 18) with total score 35.
- Psychological health (questions number 5,6,7,11,19,and 26) with total score 30.
- Social relationships (questions from 20 to 22) with total score 15.
- Environment (questions number 8,9,12,13.14, 23 ,24 and 25) with total score 40.

Tools III : Educational program : This program was developed for purpose of the study . The program content included knowledge (i.e. Patho physiology of disease, signs and symptoms, complications of the disease ,medication ,diet, exercise and smoking)

II-Operational Design:

- **Preparation, which included:**
  - **Reviewing related literature concerning the topic of the study**
  - **Developing a structured questionnaire format for knowledge in order to assess patients knowledge about angina pectoris disease**

- **Measuring tools of subjective and objective outcomes was adapted through:**

- ***content validity*** was established for testing relevance, simplicity, clarity and any ambiguity through a jury, with the help of five experts in the field of {nursing and medical } including a *professor in medical surgical nursing*, faculty of nursing benha University, *assistant professor in medical surgical nursing*, faculty of nursing Ain shams University, two *assistant professor in medical surgical nursing*, faculty of nursing Benha University as well as Professor of Cardiology faculty of medicine , Benha University.

- **Legal aspects for ethical considerations:**

1. Each patient was informed that tools will not embarrass of modesty and will not cause any harm or pain for participant patients.

2. It will not cause risks of physical or psychological, social and don't run with ethical beliefs.

3. Confidentiality was ensured throughout the study process, where personal data was not disclosed, and the patient were assured that all data will be used only for research purpose.

4. Each patient was informed that, participation is voluntary and his withdrawal will not affect his care.

- **Pilot Study**

A pilot study was conducted on 10% of total sample of patients with angina pectoris through (September, 2017) in order to test the clarity and applicability of the study tools and the booklet (Arabic version). Required modifications were done in the form of adding or omission of some questions. The time needed to fill in the questionnaire was about (30-45 minutes) divided as (15-30 minutes) for the first tool and (10-15 minutes) for the second tool. patients involved in the pilot study were excluded from the main study subjects.

- **Field Work**

Data were collected in the following sequence

- The study was approved and an official permission to carry out the study was obtained from pertinent authorities after explanation of its purpose.

- Structured interview was conducted for patients eligible for the study (fulfilled the inclusion criteria) in order to explain the purpose of the study, assure confidentiality .
- Data were collected from the begging September 2017 to the end of June 2018.

Data collection were administered by the researcher and include four phases :

A- Assessment Phase:

- This was the first phase in the program, where data were collected from patients and from their current medical records as baseline measures for their knowledge needs, using study tools I which included; sociodemographic data, patient medical history, life style ,patient problems, patient knowledge and and assess quality of life of the patients using tool II.

B-Planning Phase (program development):

Proposed program general and specific objectives were designed based on predetermined subjects, pre program assessment, relevant literature, and opinions of the medical and nursing experts. This program was revised and modified based on the experts' comments, in order to be implemented using various methods including a booklet contained major headlines of the quality of life program for angina pectoris patients ,
which was designed by researcher, and written in a very simple Arabic language as well as supplemented by photos and illustrations.

- **Participants:** Provisions were made to ascertain the characteristics of patients actually targeted by the program.

- **Location:** Ensuring a study environment that is most convenient to the studied subjects, at cardiac care unit during their hospitalization period and at waiting room in the outpatient clinics.

- **Statement of objectives used in the program:**

Based on patients' needs obtained by the analysis of data yielded by tools I and II during pilot study, and assessment phase.

Overall objectives: Upon completion of these sessions the patient should be able to:

- Acquire knowledge about quality of life program

Specific objectives:

- Identify definition of angina pectoris

- Identify signs and symptoms of angina pectoris
- List causes of angina pectoris
- Identify factors lead to chest pain
- Identify methods to prevent chest pain
- List complication of angina pectoris
- Comply with ideal diet regularly
- Explain ways to stop smoking
- List benefits of exercise
- identify medications used for the treatment of angina pectoris and its Side effects
- Identify Methods used by patients with angina pectoris to overcome the physiological problems of the disease.
- Identify Methods used by patients with angina pectoris to overcome the psychological problems of the disease.
- Identify Methods used by patients with angina pectoris to overcome the social problems of the disease.

Selection of teaching methods:

- Lecture of simplified instructions followed by discussion
- Illustrating pictures about preventive measures of chest pain
- Brain storm
- Teaching on spot

C- Implementation Phase:

Once the pre test and the program planned and designed ,the implementation phase was started .A total number of 50 patients who fulfilled the inclusion criteria were recruited to fulfill the aim of the study . The program was implemented in the form of six sessions,

The duration of each session was one hour and 5 patients were included in the session . The researcher was available 3 days per week in the morning and afternoon shift in cardiac care unit at Benha University Hospital.

The content of sessions divided as follow

Session one: it was constructed to orient the patient with program and explaining its purpose in simple words, in Arabic language ,to suit the patient level of understanding as well as their accompanying relatives during sessions. .

Session two: included explanation about angina pectoris definition ,signs and symptoms ,risk factor and complication .

Session three: it was constructed to discussed the patients knowledge and life style and how to modified undesired habits . The knowledge related quality of life were taught to the study subjects and guided by instructional booklet.

Session four: including period of discussion according to patient's progress and feedback then complete the discussion about methods used by patients with angina pectoris to overcome the physiological problems of the disease and related drugs.

Session five: concerned with methods used by patients with angina pectoris to overcome Psychological problems related to the disease

Session six: The methods used by patients with angina pectoris to overcome the social problems related to the disease were discussed in this session .

Each session started by revision about what was given in previous session and the objective of new session , at the end of each session, patients questions were discussed to correct any misunderstanding. The booklet was distributed to patients in the first day of program implementation.

D- Evaluation Phase:

After implementation of an educational program, the post test was administered to evaluate the effectiveness of educational program through assess patient's knowledge

using the same questionnaire sheet of the pre test , it was included three phases immediate ,two months after implementing the program and four months after implementing the program at the follow up outpatient clinic.

III. Administrative Design:

Permission to conduct this study was obtained from administrative personnel of Faculty of Nursing to hospital directors and heads of the cardiac care unit at Benha University hospital (Letters including the aim of the study to gain their approval).

Besides, personal communication was done with nurses and physicians to explain the purpose of the study and gain their best possible cooperation. As well as, patient's informed written consent to participate in the study was obtained after explaining its purpose and procedures.

IV. Statistical Design:

The collected data were tabulated and statistically analyzed using an IBM computer and the statistical package for social science (SPSS) advanced statistics, version 22 (SPSS Inc., Chicago, IL) .Data were summarized using 1)the arithmetic mean as an average describing the central tendency of observation for each variable studied;2)the standard deviation as a measure of dispersion of results around the mean ; 3)the frequency and percentage of observation for each variable studied. Other statistical tests such as chi-square correlation coefficient was calculated between socio-demographic data and total knowledge score and between total knowledge score. Cronbach's Alpha test was used to test reliability of the tool .

- **Level of significance**

A p-value < 0.05 was considered significant, and <0.001 was considered highly significant.

Limitations of the Study:

1- Unsuitable environment, as sessions were held in the outpatient clinics where there were too much noise and lack of privacy .

Table(1): Frequency and Percentage distribution of studied patients related to their socio-demographic characteristics **(n = 50)**

Socio-demographic data / Frequency	No.	%
Age (In years)		
20- ≤40	6	12.0
40 –≤ 50	17	34.0
50-60	27	54.0
Min. – Max.	65.0–26.0	
SD.±Mean	9.73±49.92	
Gender		
Male	21	42.0
Female	29	58.0
Marital status		
Single	3	6.0
Married	26	52.0
Widowed	10	20.0
Divorced	11	22.0
Educational level		
Illiterate	5	10.0
Reads and writes	15	30.0
Average level	25	50.0
high level	5	10.0
Occupation		
Not working	23	46.0
Working	27	54.0
✓ Mental work	8	29.6
✓ Technical work	19	70.4
Housing close to the place of health follow-up		
Yes	17	34.0
No	33	66.0

Table (2): Frequency and percentage distribution of the studied patients according to their medical history (n = 50)

Patient medical history / Frequency	No.	%
Onset of disease		
less than one year	35	70.0
From one to five years	15	30.0
Number of hospital admissions		
Once	23	46.0
Twice	19	38.0
three times	8	16.0
Associated diseases*		
Arteriosclerosis	22	44.0
Hypertension	20	40.0
Diabetes	9	18.0
Psychological stress	4	8.0
Factors causing the disease*		
Psychological	7	14.0
smoking	11	22.0
lack of exercise	13	26.0
Obesity	19	38.0
Chest pain with *		
Psychological tension	18	36.0
Effort	24	48.0
Daily activities	10	20.0
Sexual Relationship	2	4.0
Eating	8	16.0
The nature of pain		
tolerated	21	42.0
Not tolerable	21	42.0
Simple	8	16.0
Frequency of pain		
Daily	29	58.0
Repeat throughout the day	14	28.0
Rare occurrence daily	7	14.0
Follow the treatment when the pain occurs		
Yes	34	68.0
No	16	32.0

Distribution of the studied patients related to medical history(n = Table (2)"continue": 50)

Patient medical history / Frequency	No.	%
Pain management *		
Take rest	23	46.0
Avoid problems	24	48.0
Avoid noise	3	6.0
Use prescribed medication	34	68.0
Medical help	3	6.0

Patient knowledge about angina pectoris	Pre test	Post test			p_1	p_2	p_3
		Immediate	2nd month	4th month			
Angina pectoris **Max score=78** Min. – Max.	2.0 – 25.0	68.0 – 78.0	57.0 – 77.0	46.0 – 62.0	<0.001 *	<0.001 *	<0.001 *
Mean ± SD.	10.52± 5.22	76.20 ± 2.81	65.92 ± 4.47	52.94 ± 4.38			
M % S	13.49 ± 6.70	97.69 ± 3.61	84.51 ± 5.73	67.87 ± 5.61			
Healthy nutrition **Max score=54** Min. – Max.	0.0 – 40.0	53.0 – 54.0	41.0 – 54.0	34.0 – 44.0	<0.001 *	<0.001 *	<0.001 *
Mean ± SD.	13.32 ± 11.24	53.68 ± 0.47	46.36 ± 2.83	38.60 ± 2.56			
M % S	12.33 ± 10.41	99.41 ± 0.87	85.85 ± 5.23	71.48 ± 4.75			
Smoking **Max score=54** Min. – Max.	2.0 – 10.0	54.0 – 54.0	48.0 – 54.0	38.0 – 50.0	<0.001 *	<0.001 *	<0.001 *
Mean ± SD.	6.44 ± 2.50	54.0 ± 0.0	49.96 ± 0.86	43.76 ± 2.54			
M % S	11.93 ± 4.63	100 ± 0.0	92.52 ± 1.59	81.04 ± 4.71			

Exercise **Max score=66** Min. – Max.	2.0 – 20.0	66.0 – 66.0	56.0 – 63.0	44.0 – 53.0	<0.001*	<0.001*	<0.001*
Mean ± SD.	7.90 ± 4.56	66.0 ± 0.0	59.18 ± 1.22	49.82 ± 2.01			
M % S	11.97 ± 6.91	100.0 ± 0.0	89.67 ± 1.85	75.48 ± 3.04			
Medications **Max score=39** Min. – Max.	0.0 – 15.0	39.0 – 39.0	29.0 – 38.0	23.0 – 31.0	<0.001*	<0.001*	<0.001*
Mean ± SD.	4.68 ± 4.25	39.0 ± 0.0	33.24 ± 1.89	26.74 ± 2.03			
M % S	12.0 ± 10.90	100.0 ± 0.0	85.23 ± 4.85	68.56 ± 5.20			
Overall **Max score=291** Min. – Max.	10.0 – 90.0	280.0 – 291.0	236.0 – 278.0	189.0 – 237.0	<0.001*	<0.001*	<0.001*
Mean ± SD.	36.20 ± 19.60	288.88 ± 3.26	254.66 ± 9.48	211.8 ± 10.92			
M % S	12.44 ± 6.74	99.27 ± 1.12	87.51 ± 3.26	72.80 ± 3.75			

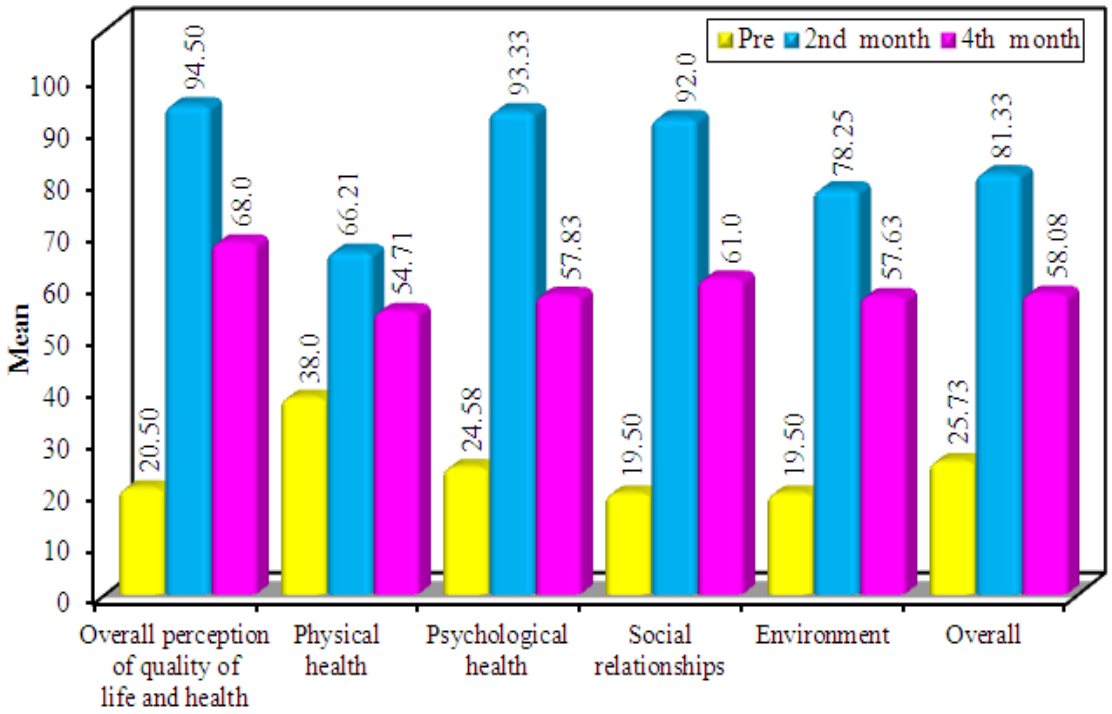

Figure (1): Mean score and standard deviation of studied patients related to their quality of life pre and post educational program (n=50)

Conclusion

Based on the findings of the current study, it can be included that:

- The post mean knowledge scores of patients with angina pectoris who were exposed to educational program were higher than their pretest knowledge mean scores.
- The post mean quality of life scores of patients with angina pectoris who were exposed to educational program were higher than their pre quality of life mean scores.
- There were positive relations between patients' knowledge, quality of life and with their socio demographic characteristics.

Recommendation

Based on results of the present study the following recommendations can be suggested:

1- There is a need for continuous monitoring and evaluating QoL of angina pectoris patients to early detecting and solving any problems.

2- The need for continuous educational programs for angina pectoris patients and their families about the disease, management, complication and ways to alleviate them.

3- React and develop the nurse's role to know how to deal with those patients to improve their QoL.

4- Encouraging social agencies to support patients with chronic illness.

5- Create recreational environment in those units by using methods that can help patients improve their QoL.

6- Further researches are needed to detect other factors that affect on angina pectoris patients such as the effect of drugs on QoL and HR-QoL.

7- Patients' care in the out patient's clinics for heart disease should be improved to offer more comfort and benefits to the patients, which may improve their QoL.

8- Encouragement of socialization and friendship as this can enhance QoL..

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