Effect of an Educational Program on Self- Efficacy for Patients with Myocardial Infraction

Nany Mohamed Erfan[1], Marwa Mostafa Rageb[2], Aml Said Taha[3] and Safaa Mohamed Hamed[4]

(1) Assistant Lecturer at MTI University, Egypt, (2) Professor of Medical Surgical Nursing - Faculty of Nursing, Benha University, Egypt and (3, 4) Assist. Professor of Medical-Surgical Nursing, Faculty of Nursing Benha University, Egypt

Abstract

Background: Myocardial Infarction (MI) is a common presentation of ischemic heart disease. **Aim of study**: Was to evaluate effect of an educational program on self efficacy for patients with myocardial infraction. **Research design**: Quasi experimental study was utilized to conduct the aim of the study. **Setting**: This study was conducted at Coronary Care Unit (CCU) in Benha University Hospital. **Sample**: Purposive sample consisted of 70 patients with myocardial infarction admitted to CCU. **Tools for data collection:** (1) structured interviewing questionnaire including (demographic data, present illness, illness related data, daily habits sheet and patient's learning need tool) (2) self efficacy scale and cardiac exercise self scale. **Results:** There was increase in the mean score of patient's knowledge (study group) immediate post and after 3 months of program implementation with highly statistical significance than control group. Also there was high self efficacy of study group after 3 months of program implementation, while there was low self efficacy with control group. **Conclusion**: Educational program improve self efficacy of the patient. **Recommendations**: Further studies should be evaluating self efficacy on other cardiac diseases.

Key words: Myocardial infraction , self efficacy.

Introduction

Cardiovascular Disease (CVD) is the most common cause of death worldwide, causing 31% of all deaths, coronary artery disease remains a major cause of morbidity and mortality worldwide, this figure is much greater in low- and middle income countries, where CVD is estimated to cause 82% of deaths(**World Health Organization** (**WHO)., 2020)**.

Myocardial infarction is one of the cardiovascular life threatening diseases. Incidence of MI is increasing throughout the world. By the year of 2030 the incidence rate is expected to increase by 120% for women and 137% for men in developing countries compared with 30-60% in developed countries **(Antman E ., et al., 2018)**

Cardiac rehabilitation is considered to be one of the most effective strategies to support secondary prevention in patients with CVD **(Sumner, J., Harrison ,A., &Doherty, P. 2017)**. In the cardiovascular literature, self-care refers to compliance to treatment recommendations, symptom response, and adoption of healthy lifestyles like weight management and smoking cessation. Education designed to promote these self-care behaviors into all major clinical practice guidelines for Coronary Artery Disease CAD **(Dickson ,V., et al 2018).**

Self-efficacy beliefs are an important aspect of human motivation and behavior as well as influence the actions that can affect one's life. Regarding self-efficacy, it refers to beliefs in one's capabilities to organize and execute the courses of action required to manage prospective situations. Self-efficacy can play a role in not only how you feel about yourself, but whether or not you successfully achieve your goals in life developing a personality **(Lunenburg , F.2018)**

Significant of the study

Cardiovascular diseases one of the top 10 causes of death accounted for 55% of the 55.4 million deaths worldwide. The world's biggest killer is ischemic heart disease, responsible for 16% of the world's total deaths. Since 2000, the largest increase in deaths has been for this disease, rising by more than 2 million to 8.9 million deaths in 2019 **(WHO,2019).**

Aim of the study

This study aimed to evaluate effect of an educational program on self-efficacy for myocardial infarction patients.

Research hypothesis

H1: Knowledge of the study group would be improved after applying the program than the control group.

H2: Application of an educational program would have a positive improvement effect on self efficacy of study group.

Subjects and methods

Research design: A Quasi experimental design was conducted in this study**.**

Settings: The study was conducted in C.C.U. in Benha University Hospital.

Subjects: Purposive sample consists of 70 patients with myocardial infarction, which randomly divided into 2 groups (control &study) in six months

The subjects were selected according to power analysis by the **(Steven .k .2014)**

Tools for data collection: Two tools used to conduct this study.

Tool I: Structured interview questionnaire

This tool to assess the baseline data, daily habits & learning needs of patient, it consist of four parts:

- **Part I: Demographic data and related data of patients**

This part contain items regarding patient's personal data (age, sex, place of residence, level of education, marital status & occupation)

It was adapted from **Sedika 2018, Perk et al., 2012 and Murfin 2010** and modified by the researcher

- **Part II: Patient medical history**

This part contain present illness & illness related data.

Present illness ' Subjective expressed pain' (activity causing chest pain, onset, description,, continuity, duration, degree, site of pain radiation, aggravating & alleviating of pain &symptoms associated with pain)

Illness related data 'associated disorders '(diabetes mellitus, hypertension, previous hospitalization, previous surgeries & previous heart diseases).

- **Part III: patient daily habits:**

It used to assess medication ,diet, sleep pattern, exercise and activity ,smoking, work& psychological stress) , it was adapted from **Perk et al. 2012** and modified by the researcher.

Scoring system: Patient daily habits consist of 7 items with total score 32, total daily habits score classified as:

Satisfactory level was considered ≥ 70% =23 score

Unsatisfactory level was considered < 70% =23score

- **Part IV: patient learning needs tool (knowledge measurement):**

To assess patient knowledge about myocardial infarction, it contain 23 closed ended questions which included definition of disease, causes, risk factors, signs & symptoms, complication & management.

It was adopted from **Murffin 2010**

Scoring system: Contain 22 closed ended questions and formed of multiple choice, the score (1) for correct answer, and (0) for incorrect answer. Total knowledge score was (22)

Total knowledge score classified as:

Satisfactory level was considered ≥ 70% = 16 score

Unsatisfactory level was considered < 70% = 16 score

Tool II Self-Efficacy Scale

This tool consist of 2 parts

- **Part I: Cardiac Self -Efficacy Scale: (CSES)**

The scale is self- report scale was developed specially to measure self efficacy in a cardiac patients, it assesses patients' level of confidence in related items as control chest pain and dyspnea by change activity and medication.

It was adapted from **Sullvian et al 1998** and modified by the researcher

Scoring system: Patient were asked to rate their confidence with knowing or acting on each of the 13 statements on a 5-points scale (1=not all confident, 2= somewhat confident, 3= moderately confident, 4= confident and 5= completely confident), the items were first scored on a 5 – point Likert scale ranging from 1 to 5, followed by summation. Higher scores indicate a greater level of cardiac self efficacy in maintaining function.

Total score was 65

- High cardiac self efficacy if the score ≥ 70 =45score.
- Low cardiac self efficacy if score < 70% =45score.

Part II Cardiac Exercise Self Scale (ESES):

The scale is self- report scale was developed specially to measure exercise self efficacy in a cardiac patients, it assesses patients' level of confidence in such exercise related items as performing warm –up and cool down, taking their heart rate and knowing what it should be, enduring strenuous and moderate exercise and fitting exercise into a busy day.

It was adapted from **Hickey et al 1992** and modified by the researcher.

Scoring system: Patient were instruct respondents to indicate their response on the 5-point rating scale (1= no confident, 2= very little confident, 3= some confident, 4= confident and 5=very confident) how confident they are with regard to carrying out regular physical activities and exercise, it contain 16 statements Each question uses five points response scale with (1) represented the lowest and (5) the highest efficacy rating. It was classified as:

Total score was 80

- High cardiac exercise self efficacy if the score ≥ 70 =56 score.

- Low cardiac exercise self efficacy if score < 70% = 56 score.

Validity and reliability:

- The revision of the tools was done by a panel of five medical surgical nursing expertise to test the relevance and clarity of contents and minor modifications were done in the form of rephrasing and organization of some questions.
- Testing reliability of proposed tools was done by Alpha Cronbach's alpha test. It was used to test whether the questionnaire had internal consistency. The patients' daily habits and learning needs (knowledge regarding myocardial infraction), the reliability score of tool as above is (0.869 and 0.807) this indicated high total internal consistency of the used tool.

Ethical considerations

- The research approval was obtained from the ethical committee of Faculty of Nursing before initiating the study work.
- The researcher clarified the purpose and aim of the study to patients included in the study before data collection.
- Oral consent was obtained from patients to participate in the study.
- The researcher assured maintaining, anonymity and confidentiality of subjects' data and that, it will be used for research purpose only.
- The subjects were informed that they are allowed to choose to participate in the study and they have the right to withdraw from the study at any time.

Pilot study:

It was done on 10 % of both studied groups (4 in study group) and (4 in control group) assess the applicability of the study tools and estimate the proper time required for answering the required data. All participants in the pilot study were excluded from the main study.

Field work:

Assessment phase:

Assessment of patients' knowledge(learning needs) and daily habits was done. This assessment shed light on current knowledge and patient daily habits level to detect the defect and help in developing the educational program according to results.

Planning phase:

The researcher made exploratory visit to study setting to put plan for carrying out the study, educational program developed by the researcher according to patients' needs, moreover teaching materials such as (discussion, demonstration and booklet) prepared to help in covering theoretical and practical information

Implementation phase:

- The study sample was 70 patients divided into 2 groups as control and study at CCU Benha University Hospital.
- Interview with studied patients to explain the aim of the study, the effect of this study on their daily habits & self-efficacy practice and took their approval to participate in the study prior to data collection.
- Firstly, start with control group for first 3 months by assess control group's daily habits using tool I part 3, assess knowledge of myocardial infraction (learning needs) using tool I part 4, self-efficacy and self exercise by using questionnaires (tool II part 1& 2).
- Assess the study group's daily habits, knowledge, self efficacy & cardiac exercise and follow up after discharge with 3 months by reassess daily habits (tool I part 3), knowledge of myocardial infraction (tool I part 4), self-efficacy and self exercise by using questionnaires(tool

II part 1&2) for both groups (control and study).

- The researcher developed an educational program and booklet regarding knowledge for patients with myocardial infraction according to their needs in simple Arabic language.
- Designed booklet were given by the researcher to study group patients in order to grasp attention, motivation and help them for remind information at home also to support teaching and practice

Educational program

It was conducted by the researcher according to the actual needs' assessment of the study patients after reviewing the related literature consisted of two parts:

1-Theoretical part: - Knowledge booklet given to study group included four sessions.

2-Practical part: - Demonstration self care measures and self efficacy given to study group it included two session

Evaluation phase:

It was used 3 times (pre, immediate post & after 3 months) of program implementation to evaluate studied patient's knowledge (tool I part 4), daily habits (Tool I part 3), cardiac self efficacy scale (Tool II part 1) and cardiac exercise self scale (Tool II part 2).

Statistical analysis

Recorded data were analyzed using the statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

The following tests were done:

- Chi-square (x2) test of significance was used in order to compare proportions between qualitative parameters.
- Independent-samples t-test of significance was used when comparing between two means.
- A one-way analysis of variance (ANOVA) when comparing between more than two means.
- The confidence interval was set to 95% and the margin of error accepted was set to 5%. So, the p-value was considered significant as the following:
- Probability (P-value) -P-value <0.05 was considered significant

Results

Table 1: Illustrates the demographic characteristics of the studied patients, it indicate that (65.7%) of control and (51.4%) of study group aging from 30 -39 years old, (74.3%) of control and (62.9%) of study group and group were males.

Figure 1: Shows that the control group (51%) and (65.7%) of study group were primary education.

Figure 2: Shows that the control and study group (80% & 74.3%) respectively were married. There were no statistical significant difference between two group (study and control) patients. That mean the two groups were homogeneous.

Table 2: Indicate that control group (40%) and(28.6%) of study group feeling chest pain during upstairs, control group (60%) and (80%) of study group had sudden onset of pain, control group(85.7%) and (80%) of study group had severe chest pain and (65.7%) of control group and (77%) of study group had burning pain. There were no statistical significant difference between two group (study and control) patients. That mean the two groups were homogeneous.

Table 3: Demonstrates illness related data of the studied patients. (34.3%&37.1%) of

control and study group had diabetes mellitus since more than 6 years, (42,9% &41,2%) of control and study group had hypertension since more than 6 years and control group (71.4%) and (76.5%) of study group were hadn't any cardiac diseases with no statistical significant. There were no statistical significant difference between two group (study and control) patients. That mean the two groups were homogeneous.

Table 4: Reveals that the lowest mean score for control and study group pre program implementation regarding smoking and work (1.23 ± 0.43& 1.06±0.24 respectively). On the other hand, the mean scores were increased for study group. It showed that highly statistical significant differences in all items except of work (P= 0.809) respectively.

Table 5: Reveals that increase in mean score of study group immediate post and post 3 months, while there were fixed mean score with control group immediate post and post 3 months. It shows that highly statistically significant differences in all items of patient 's knowledge about myocardial infraction.

Table 6: Reveals that increase in total mean score of study group post 3 months of program implementation, while there were fixed mean score with control group post 3 months. It shows that highly statistically significant differences in all items of total cardiac self efficacy scale.

Table 7: Reveals that increase in mean score of study group post 3 months of program implementation, while there were fixed mean score with control group post 3 months. It shows that highly statistically significant differences in all items of cardiac exercise self scale.

Table 8: Shows that there is high statistically significant difference between correlation of total knowledge score and cardiac self efficacy pre and post 3 months of program implementation (p<0.000).

Table (1): Demographic characteristics of the patients N=(70)

Item		Control group (35)		Study group (35)		X^2	P
		No.	%	No.	%		
Age	20 – 29 yrs	6	17.1%	6	17.1%		
	30 – 39 yrs	23	65.7%	18	51.4%	2.080	0.353
	40 – 50 yrs	6	17.1%	11	31.4%		
	Mean ± SD	36.18 ± 10.38		36.54 ± 9.22			
	Range	21 – 50		20 – 49			
Gender	Female	9	25.7%	13	37.1%	0.153	0.878
	Male	26	74.3%	22	62.9%		

P-value >0.05: Non significant (NS); P-value <0.05:
Significant (S); P-value< 0.01: highly significant (HS)
(X2): difference between study & control demographic characteristics.

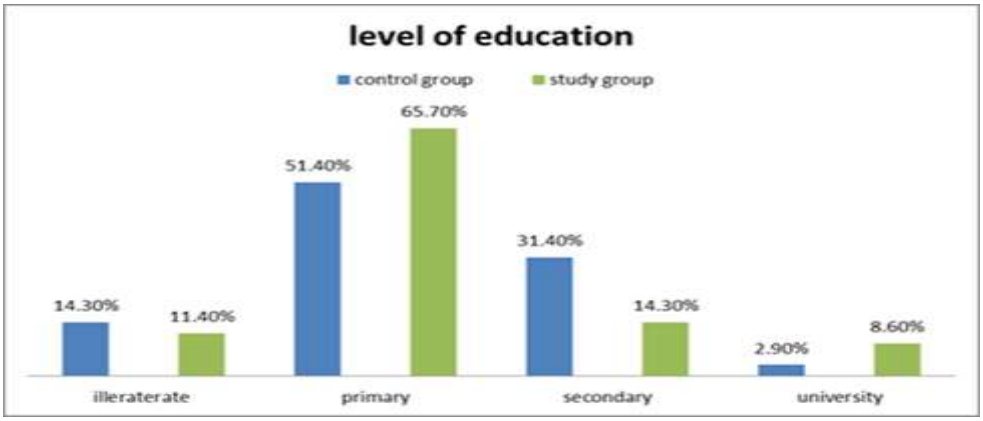

Figure (1) level of education of studied patients(control & study group)

Figure (2): Marital status of studied patients (control & study)

Table (2): Comparison between the study & control group patients according to their illness related data (present history) (N=70)

Present history		Control group(35)		Study group(35)		X^2	P
		No.	%	No.	%		
Chest pain during	Sleep	3	8.6%	4	11.4%	5.910	0.315
	Rest	5	14.3%	3	8.6%		
	Upstairs	14	40.0%	10	28.6%		
	Exercises	9	25.7%	6	17.1%		
	Hard Work	2	5.7%	6	17.1%		
	Daily activities	2	5.7%	6	17.1%		
Onset of pain	Sudden	21	60.0%	28	80.0%	3.333	0.068
	Gradual	14	40.0%	7	20.0%		
Description of pain	Pressure	4	11.4%	0	0.0%	4.320	0.115
	Pulsating	8	22.9%	8	22.9%		
	Burning	23	65.7%	27	77.1%		
Continuity of pain	Continuous	27	77.1%	31	88.6%	1.609	0.205
	Intermittent	8	22.9%	4	11.4%		
Period of pain	5 - 10 Min	2	5.7%	0	0.0%	3.093	0.213
	20 - 30 Min	21	60.0%	18	51.4%		
	More than 30 min	12	34.3%	17	48.6%		
Degree of pain	Moderate	5	14.3%	7	20.0%	0.402	0.526
	Severe	30	85.7%	28	80.0%		
Site of pain	Chest	28	80.0%	31	88.57%	0.971	0.324
	Back	7	20.0%	4	11.43%		

P-value >0.05: Non significant (NS); P-value ≤0.05: Significant (S); P-value≤ 0.0001: highly significant (HS) (X2): difference between study & control present medical history

Table (3): Comparison between the study and control group patients according to their illness related data (n=70)

Illness related data		Control group(35)		Study group(35)		X^2	P
		No.	%	No.	%		
Diabetes	No Diabetes	12	34.3%	13	37.1%	0.183	0.980
	1 > 3 years	7	20.0%	7	20.0%		
	3 > 6 years	4	11.4%	3	8.6%		
	More than 6 years	12	34.3%	12	34.3%		
Hypertension	No Hypertension	4	11.4%	10	29.4%	4.932	0.177
	1 > 3 years	8	22.9%	3	8.8%		
	3 > 6 years	8	22.9%	7	20.6%		
	More than 6 years	15	42.9%	14	41.2%		
Admission of hospital	No	14	40.0%	17	48.6%	4.319	0.229
	Check up	3	8.6%	0	0.0%		
	Crises	9	25.7%	6	17.1%		
	Surgery	9	25.7%	12	34.3%		
Past surgical history	No	25	71.4%	22	62.9%	2.268	0.519
	Abdomen	3	8.6%	6	17.1%		
	Limbs	7	20.0%	6	17.1%		
	Bone	0	0.0%	1	2.9%		
Cardiac diseases	No	25	71.4%	26	76.5%	7.825	0.098
	Valve diseases	0	0.0%	1	2.9%		
	Stenosis in arteries	7	20.0%	4	11.8%		
	Dysrhythmias	0	0.0%	3	8.8%		
	Congenital	3	8.6%	0	0.0%		
	Vascular diseases						

P-value >0.05: Non significant (NS); P-value ≤0.05: Significant (S); P-value≤ 0.0001: highly significant (HS)

(X2): difference between study & control illness related data.

Table (4): Comparison of daily habits between the patients (study& control group) through different study periods (pre, immediate post & after three months.) (N=70)

Daily habits	Pre program				Immediate post				Post 3 months.			
	Control group (35)	Study group (35)	T	P-value	Control group (35)	Study group (35)	T	P-value	Control group (35)	Study group (35)	T	P-value
	Mean±SD	Mean±SD			Mean±SD	Mean±SD			Mean±SD	Mean±SD		
Commitment to medication	2.69 ± 0.68	2.80 ± 0.53	0.786	0.434	2.69 ± 0.68	2.80 ± 0.53	0.786	0.434	2.69 ± 0.68	3.91 ± 0.28	1.731	0.048
Pattern of diet	2.20 ± 0.41	2.23 ± 0.43	0.287	0.775	2.20 ± 0.41	2.23 ± 0.43	0.287	0.775	2.20 ± 0.41	2.80 ± 0.41	4.294	<0.000
Sleeping pattern	1.80 ± 0.63	2.09 ± 0.78	1.682	0.097	1.80 ± 0.63	2.09 ± 0.78	1.682	0.097	1.80 ± 0.63	2.20 ± 0.41	1.116	0.028
Exercise & activities	1.23 ± 0.43	1.09 ± 0.28	1.651	0.103	1.23 ± 0.43	1.09 ± 0.28	1.651	0.103	1.54 ± 0.51	1.40 ± 0.65	4.665	<0.000
Smoking	1.23 ± 0.43	1.09 ± 0.28	1.651	0.103	1.23 ± 0.43	1.09 ± 0.28	1.651	0.103	1.49 ± 0.51	1.94 ± 0.24	4.837	<0.000
Work	1.37 ± 0.49	1.06 ± 0.24	3.419	0.431	1.37 ± 0.49	1.06 ± 0.24	3.419	0.431	1.37 ± 0.49	1.63 ± 0.49	0.242	0.809
Psychological stress	3.40 ± 1.44	3.20 ± 1.43	0.583	0.562	3.40 ± 1.44	3.20 ± 1.43	0.583	0.562	3.40 ± 1.44	3.97 ± 1.25	1.519	0.033
Total	13.93 ± 4.18	13.56 ± 4.4	0.786	0.434	13.92±4.51	13.56±3.97	0.786	0.434	14.49 ± 4.67	17.85 ± 3.73	2.904	0.000

P-value >0.05: Non significant (NS); P-value ≤0.05: Significant (S); P-value≤ 0.0001: highly significant (HS)

(t): difference between study & control group s'daily habits by independent t-test

Table 5: Comparison between total mean score of study& control group knowledge regarding myocardial infraction all through program phases. (N=70)

Patient's knowledge about myocardial infraction	Pre program				Immediate post				Post 3 months..			
	Control(35)	Study(35)	T	P	Control(35)	Study(35)	T	P	Control(35)	Study(35)	T	P
	Mean±SD	Mean±SD			Mean±SD	Mean±SD			Mean±SD	Mean±SD		
Total score	65.07±20.78	63.75±25.89	3.392	0.051	62.27±19.12	78.33±15.87	15.421	0.002	64.78±20.05	82.1±15.91	18.681	0.000

P-value >0.05: Non significant (NS); P-value ≤0.05: Significant (S); P-value≤ 0.0001: highly significant (HS)

(t): difference between study & control group knowledge about M .I. by independent t-test

Table (6): Comparison between total mean score cardiac self efficacy scale for the study & control group patients (pre program & after three months.) (N=70)

Cardiac self efficacy		Pre program				after 3months			
		Control group(35)	Study group(35)	T-test	P	Control group(35)	Study group(35)	T-test	P
Total cardiac self efficacy	Mean±SD	35.51±12.44	37.1±15.42	0.583	0.563	35.35±12.07	48.05±10.8	2.893	0.005

P-value >0.05: Non significant (NS); P-value <0.05: Significant (S); P-value< 0.01: highly significant (HS) (t): difference between study & control group 's self efficacy by independent t-test

Table 7:Comparison of total mean score for cardiac exercise self scale regarding the study & control group patients (pre program & after three months. (n=70)

Cardiac exercise self scale		Pre program				after 3months			
		Control group(35)	Study group(35)	T-test	P	Control group(35)	Study group(35)	T-test	P
Total cardiac exercise self scale	Mean±SD	40.29 ± 14.93	42.74 ± 15.85	2.426	0.118	50.93 ± 12.95	42.60 ± 15.87	116.049	0.032

Table (8): Correlation of (total knowledge and total cardiac self efficacy scale pre & post 3 months of program implementation (N=70)

Variable	Cardiac self efficacy							
	Pre-program				Post 3 months			
	Control group (35)		Study group (35)		Control group (35)		Study group (35)	
Total knowledge score	r	P-value	r	P-value	r	P-value	r	P-value
	-0.888	0.000	-0.289	0.092	-0.883	0.000	0.107	0.541

P-value >0.05: Non significant (NS); P-value <0.05: Significant (S); P-value< 0.01: highly significant (HS)

Discussion

Cardiac self-efficacy was shown to be the most influencing factor on health behaviors modification. Cardiac self-efficacy can predict key outcomes such as reductions in likelihood of hospital admissions and cardiac functioning following a myocardial infraction event **(Kang, V.& Yang ,I. 2013)**

Patients could be more confident in performing self-care health behaviors by more

effectively managing their cardiovascular risk factors if interventions are done to improve cardiac self-efficacy **(Ahn, S., Song, R., Shoi, S.2016)**

As regard socio-demographic data of the patient :This study revealed that more than half of studied patient's age ranged from (30 to 39 years old). From the researcher point of view, the age 35 or higher the most age affected with cardiac diseases especially myocardial infraction, because stress of life, work, responsibilities.

This is in the line with **Abdel-Hameed , M.(2016)** who studied "a designed nursing intervention protocol on myocardial infraction patient's outcome at a selected university hospital in Egypt", he stated that more half of the sample age ranged between 30 to 45 years old.

As regard gender :The current study revealed that about two third of studied patient's were male. From the researcher view, the rational for these findings may be due to the male in this age are more likely to have ischemic heart disease, hypertension because of stress of work.

This finding are in the line with **Kurlansky ,P., et al, (2016).** who reviewed "Coronary Artery Bypass Graft Versus Percutaneous Coronary Intervention " and it's result male had increase incidence of coronary artery diseases than female. In contrast with, **Hemingway,H., et al, (2018).** who reported in their study about "Prevalence of angina in woman versus man" that females have pectoris more than males.

As regard level of education: Current study is showing that level of education of studied group revealed that more half of them primary educated. This findings are coherent with **Pedro ,A., et al, (2014)** who studied "cognitive dysfunction in myocardial infraction" which reported that most patient were read and write, similarity this result in agreement with study by **Eltohamy, O., (2018)** about "quality of life among patients with myocardial infraction diseases" who stated that the majority of patient with myocardial infraction were read and write.

As regard job: The current study revealed that about one third of studied patients was employment. From the researcher point of view, this is due to stress of daily work and a routine manner of work, which cause feeling of uncomforting and with time, it become boring this lead to stress, irritability and anxiety, all of these feelings risk factors to occurrence of myocardial infraction. These findings was coherent with **Mohamed, M., et al, (2017).** They reported that more than two third of patient were employed. Also in the line with **Alwossby, S., (2017).** who studied "need assessment for patient with myocardial infraction" and reported that the majority of patients were employed.

As regard present illness: Current study shows that more than two third of studied patients had sudden onset of disease.

That's agreement with **Shahira , E.(2017)** who studied" effect of educational program on self efficacy on myocardial patient's", said that more than two third of studied patient's had sudden onset of disease. Current study revealed that more than one third of studied patients had difficulty of breathing.

As regard illness related data: This study demonstrates that more than one third of the patients (study & control) had diabetes mellitus since more than 6 years, about the same percentage had hypertension since more than 6 years. This in the line with **Sedika , S.**

(2018), she said that about less than quarter of studied patients had diseases in arteries.

As regard patient's daily habits: Current study revealed that, there was increase in the mean score of study group regarding patient's daily habits immediate post and after 3 months of program implementation. These findings confirmed with **Gulanick,M. & Mayers,J . (2014)** who studied " effect of smoking on behaviors of cardiac patient" reported that smoking of study group decreased after gaining knowledge about effect of smoking on their cardiac health.

As regard patient patient's knowledge about myocardial infraction : The current study revealed that there is increase in the mean score of patient's knowledge, immediate post and after 3 months of program implementation of the study group more than pre program. in the line with **Ahmed, S. (2015)** who studied "effect of self-care program on quality of life of patient with myocardial infarction", he reported that there was significant increase in level of patient's knowledge regarding definition, causes, risk factors, clinical picture, and complications of MI after implementation of the self-care program.

As regard cardiac self efficacy: The current study revealed that there was high self efficacy of the study group after 3 months of program implementation, while with control group there was low self scale after 3 months of program implementation These findings are agreement with **Shahira, E. (2017)** stated that her study showed significant improves in patients' self-efficacy after implementation of the health education program, none of the studied subjects had satisfied self-efficacy in pre program phase, while less than three quarters of the studied patients had satisfied self-efficacy in post program phase and more than two thirds of the studied patients had satisfied self-efficacy in follow-up phase.

As regard cardiac exercise self scale : This study revealed that there were increased in the study group's mean score cardiac exercise self scale after 3 months of program implementation more than pre program,while with control group there was fixed in mean score cardiac exercise self scale after 3 months of program implementation. The researcher opinion, the rational for increase mean score of cardiac exercise self scale after 3 months of program implementation due to providing patients knowledge about selection suitable exercises for their health, and not make fatigue and when stop or take rest during exercises.

These results are in the line with **Joshua ,G. (2013),** who studied "benefits of intensive treadmill exercise training on cardiorespiratory function and quality of life on patients with pulmonary hypertension". had results illustrate that more than 60% of study participants met exercise guidelines prior to hospital admission. But contrast with **Sarkar, U., et al, (2017)**, who studied " self efficacy and health status in patients with coronary heart disease", stated that postulate that making the time and expending the energy to build exercise into one's daily routine is difficult for healthy adults, and possibly even more so for those with CHD who have a limited energy reserve due to impaired cardiac function

As regard correlation between total patient's knowledge and self efficacy: Current study shows that there is high statistically significant correlation between total knowledge score and cardiac self efficacy pre and post 3 months of program implementation The finding of the current study consistent with **Taha , N., et al. (2016),**who found significant and positive correlations between patients' self-efficacy

score and their educational level and knowledge score.

Conclusion:

Knowledge of the study group improved than control group after educational program implementation. Self-efficacy of the study group higher than control group after application of an educational program.

Application of an educational program had a positive improvement effect on self-efficacy of the study group. Obviously, it was a positive effect between patients' knowledge and self-efficacy.

There was a positive correlation also between total knowledge score and total cardiac self-efficacy pre, immediate post and after 3 months of educational program implementation

Recommendation:

General recommendations:

1. Replication of the study on a larger number probability sample selected from different geographical areas in Egypt is recommended to obtain generalizable data.
2. Further studies should be evaluated self-efficacy on other cardiac diseases.

Patients Recommendations:

- Recommend patients for frequent follow-up appointments for early detection and prevention of complications.
- Instruct the patients to avoid activities that may precipitate chest pain

Nurses Recommendations:

- Recommend nurses to improve patients' care in out-patients' clinics to provide more comfort and decreasing number of pain crisis by improving self-care measures.
- Nurses should provide additional program for in-home pain management with the training of cognitive and behavioral techniques to deal with the pain

Ensuring of adequate assessment of nurses during their care and providing teaching with motivation and feedback for patients with M.I.

Community Recommendations:

- Encouraging social agencies to support patients with chronic diseases such as cardiovascular diseases.
- The study provides recommendations for the healthcare system to facilitate a reduction in the financial burdens of this critical disease.

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تأثير البرنامج التعليمي علي الكفاءة الذاتية للمرضي الذين يعانون من إحتشاء عضلة القلب

ناني محمد عرفان ظهر- مروة مصطفي حجازي - أمل سعيد طه - صفاء محمد حامد

تشكل الكفاءة الذاتية للقلب حافزا للأشخاص المصابين بأمراض الشرايين التاجية على التغييرإلي نمط الحياة الصحي ، كلما كانت الكفاءة الذاتية منخفضة كلما إرتبط ذلك بسوء الحالة الصحية وانخفاض جودة الحياة. وقد وجد ان الكفاءة الذاتية مرتبطة بشكل ايجابي مع الصحة النفسية . يعد البرنامج التعليمي جزءا حيويا، لتحسين الصحة والحفاظ عليها واستعادتها عن طريقها يتلقى المريض معلومات عمليًة ومفهومة خاصة بالصحة وكيفية التعامل والتكييف مع المرض. هدفت هذه الدراسة إلي تقييم تأثير البرنامج التعليمي على الكفاءة الذاتية للمرضى المصابين باحتشاء عضلة القلب . وقد أجريت الدراسة بمستشفي بنها الجامعي بوحدة الرعاية المركزة للشرايين التاجية علي ٧٠ مريض يعاني من احتشاء عضلة القلب ، حيث كشفت النتائج ان البرنامج التعليمي له تأثير إيجابي علي الكفاءة الذاتية للمرضي .وقد أوصت الدراسة بضرورة وجود كتيب مبسط وشامل لجميع مرضي احشاء عضلة القلب والذي يتضمن شرحا وافيا بالإرشادات والتعليمات لتجنب حدوث الأزمة مرة أخري.