Effect of Health Educational Program on Self efficacy and Therapeutic Compliance among Patients with Myocardial Infarction

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Abstract

Background: Self-efficacy is an individual's confidence in one's ability to manage a chronic condition or change a health habit. **Aim of the study:** Was to evaluate the effect of health education program on self efficacy and therapeutic compliance among patients with myocardial infarction in CCU at Zagazig University Hospitals. **Subjects and methods**: **Research design**: A pre/post test quasi experimental design was used to achieve the aim of the study. **Setting**: The study conducted in cardiac care unit at Zagazig University Hospitals, Sharkia, Egypt. **Subjects**: Purposive sample of 35 adult patients. **Tools of data collection**: Three tools were used: An interview questionnaire for patients, Chronic disease Self-Efficacy Scale, and Compliance assessment scale. **Results:** there was significant increase in patient' self efficacy of regular exercise, getting information about disease, obtaining support, communication with physician, management of disease, routine home activities, recreational and social activities, and manage depression post program than before with Mean ± SD 23.64±5.41, 7.69±1.79, 15.93±3.68, 25.89±5.88, 92.27±19.77, 23.73±5.79, 16.06±3.89, 51.53±8.91. Also, there was statistical significant improve in patient's compliance regarding dietary regimen, treatment regimen, and lifestyle modifications post program than before with mean ±SD 8.06±2.30, 9.69±1.97, 10.48±2.58. **Conclusion**: On the light of the current study results, it can be concluded that, there was a statistical significant increase in patient's self efficacy and improvement of therapeutic compliance regimen after implementing the effective health educational program. **Recommendation:** A simple written guidelines for patients with myocardial infarction should be available in units that provide care, to be provided to newly admitted patients, Self-efficacy for patients with myocardial infarction should be considered and evaluated during the plan for treatment of patient with MI by trained nurse.

Key words: Myocardial Infarction (MI), Self efficacy, Therapeutic Compliance.

Introduction

Myocardial infarction (MI) (heart attack) is the irreversible death (necrosis) of heart muscle secondary to prolonged lack of oxygen supply (ischemia) **[Linden & Butterworth, 2014]**.Every year about **735,000 Americans** have a heart attack or Myocardial Infarction. Of these, 525,000 are a first heart attack and 210,000 happen in people who have already had a heart attack **[Mozaffarian, Benjami, & Go, 2015].** According to the latest WHO data published coronary heart disease death in Egypt reached 107,232 or 23.14% of total death **[World Health Organization, 2014].**

The most common symptom of MI is chest pain, typically delineated as crushing, squeezing, pressing, heavy, or sometimes stabbing or burning. Chest pain tends to be targeted either within the center of the chest or simply below the middle of the rib cage, and it will unfold to the arms, abdomen, jaw or neck. Alternative symptoms will embrace unexpected weakness, sweating, nausea, vomiting, dyspnea, or lightheadedness **[Goldin, et al., 2012].**

In healthcare, self-efficacy refers to an individual's confidence in person's ability to manage a chronic health condition or change a health habit. Self-efficacy can exert a strong influence on how successful we are in achieving necessary health or life goals **[Feldmanm 2017]**. As one example of low self-efficacy, several patients notice that stop smoking is vital to their health, but, based on their previous tries, lack the confidence that they can quit. This lack of confidence blocks their feeling of management and may keep them from even making an attempt to quit again unless this sense of low self-efficacy improves **[Skolasky, et al. 2015].**

Conversely, having a sufficient sense of self-efficacy in changing a lifestyle habit predicts success; the resulting success raises self-efficacy, successively increasing the chances of making an attempt and completing the following step/task. One's self-efficacy is also a significant determinant of one's "personal agency" **[Redmond, 2016].**

Compliance is the process whereby the patient follows the prescribed and dispensed regimen as supported by the prescriber and dispenser. It is defined as the extent to which a person's behavior (in terms of taking medications, following diets, or executing lifestyle changes) coincides with medical or health recommendation **[Burls, et al., 2011]**. Compliance with therapy is a sign of a positive behavior in which the patient is actuated sufficiently to adhere to the prescribed treatment as a result of a perceived self-benefit and positive outcome **[Panesar, 2012].**

The effectiveness of health education programs has become a very important issue in managing patients with MI. Several studies have shown that health education can improve cardiovascular health items through the promotion of health-related behaviors, increase compliance rate and improve quality of life. In cardiac teaching programs, patients are educated regarding the diseases, risk factors, compliance with medication, diet regime, regular exercises, and stress reduction. The implementation is when the teaching plans are put into practice and evaluated to see whether or not the patient is in compliance and whether or not a modification in their behavior has occurred [**Ab Manap, et al., 2018**].

Discharge teaching is a necessary part of nursing care. The nurse ought to provide the patient verbal and written instructions concerning medications, stop smoking, exercise and activities of daily living, ability to return to work, and dietary changes. Most patients will be discharged with medication prescriptions, including anticoagulants, beta blockers, and ACE inhibitors **[Linden, Butterworth, & Prochaska, 2010].**

Significance of the study:

Self-efficacy will play a crucial role in health and how individuals manage their health, nutrition, and illness. For example, having a powerful sense of self-efficacy will facilitate those who try to quit smoking stick to their goals **[VanBuskirk & Wetherell, 2014]**. Maintaining a weight loss plan, managing

chronic pain, giving up alcohol, adhering to an exercise schedule, and following an eating plan can all be influenced by a person's levels of self-efficacy [**Romppel, et al., 2013**]. Moreover, the nurse help patient continually to promote and improve their compliance about medical instructions to change self image, revise daily living routines and to cope with the effects of health deviations based on patient education **[Schneider, et al., 2012].** So, this study was conducted to evaluate the effect of health education program on self efficacy and therapeutic compliance among patients with MI.

Aim of the study:

Evaluate the effect of health education program on self efficacy and therapeutic compliance among patients with myocardial infarction in CCU at Zagazig University Hospitals.

Objectives:
1. Assess self efficacy for patients with myocardial infarction.
2. Assess compliance of patients with MI toward therapeutic regimen.
3. Design and implement health education program for patients with MI.
4. Evaluate the effect of health education program on self efficacy and therapeutic compliance among patients with MI.

Research Hypothesis:
1. Mean scores of patients' self efficacy post-program will be higher than before.
2. Mean scores of patients' compliance post-program will be higher than before.

Subjects and Methods:

1) Research design

Pre/ post test quasi experimental design used to achieve the aim of the study.

Setting:

The study was conducted in cardiac care units at Cardiothoracic Hospital in Sednawy and cardiac care units in medical Hospital at Zagazig University Hospital.

Subjects:

Purposive sample of 35 adult patients with MI were recruited in this study. The sample was calculated by power and sample size, using Epi Info (Epidemiological Information system) Software Version 6. The data collected had a confidence level of 95%, and the power of the study was 80%. Patients were recruited according to the following criteria: conscious patients and able to communicate. Critically ill patients whose health status makes them unable to participate were excluded.

Tools for data collection

Tool 1: Patient interviewing questionnaire: Was designed in Arabic form to avoid misunderstanding. It was designed by the researchers based on literature review **[Mustafic, et al., 2012]** and opinions of expertise for content of validity. Covered three parts as the following:
Part I: Socio demographic characteristics of the patients: Was contained eight questions include age, gender, marital status, educational level, work, housing status, financial income, and source of treatment.
Part II: Past and family history questionnaire: Concerned with assessment of past and family history of the patients. It was contained eight questions as the following: Four

questions about past history and another four questions about, smoking, exercise, family history of cardiac disease and degree of relationship.

Part III: Present history questionnaire: concerned with assessment of present medical history. It was contained four questions about chief complaints, present complication, medication taken and drug allergy.

Tool 2: Chronic disease Self- Efficacy Scale: Was developed and tested by Stanford Chronic disease self management study then modified by the researchers to evaluate patient's confidence in doing certain activities. *It includes eight parts with thirty one items covered patients'* confidence to exercise regularly (3 items), getting information about disease (1 item), obtaining support from family, friends and community (2 items), communication with physician (3 items), managing disease in general (11 items), routine home activity (3 items), recreational and social activities (2 items), and control or manage depression (6 items) **[Lorig, Stewart, Ritter & et al.,** *1996].*

Scoring System for chronic disease self efficacy scale: Each question answered by selecting the number from 0 to 10, 0 mean no confidence at all and 10 is the highest confidence level. The general patients' self-efficacy is classified into satisfied self-efficacy if the score ≥ 60% from the maximum score and unsatisfied self-efficacy if it is < 60%.

Tool 3: Compliance assessment scale: Was used to assess compliance for patients with myocardial infarction toward therapeutic regimen. The scale was adopted from **[Ueno et al., 2018]**. This scale was modified and translated into Arabic form by the researcher to suit the nature of the study. It included three parts:

Part I: Patients' compliance toward diet regimen: Included 6 items: Follow the instruction about diet regimen, Taking meals on time, Take low salty diet, Fat diet, Fast food, and Caffeinated drinks.

The scoring system:
Each items of Patients' Compliance toward diet regimen had score as: Never take points (0), some time take points (1), always take points (2).

Part II: Patients' compliance toward treatment regimen: Included 8 items: Taking drugs on time, Taking prescribed doses, Follow up and visit the clinic according to schedule, Taking drugs without consultation, Comply with medication even if you feel better, Stop medication due to side effect and Stop medication because of its abundance, and Because of the length of treatment.

The scoring system:
Each items of patients' compliance toward treatment regimen had score as: Never take points (0), some time take points (1), always take points (2).

Part III: Patients' Compliance toward lifestyle modification: Included 8 items; Stop smoking, Reduce the number of cigarettes, Avoid sitting indoors with smokers, Avoid alcohol, Reduce excess weight, Exercise regularly, Do breathing exercises to relieve stress, and Relaxation techniques).

The scoring system:
Each items of patients' compliance toward performing the lifestyle modification had score according to likert score as: Never take points (0), some time take points (1), always take points (2).The total score of all items is classified as the following: Adequate compliance ≥ 60% and Not adequate compliance< 60%.

Content validity and reliability:

The tools were reviewed by a panel of seven expertises in nursing and medicine to ascertain their content

validity. The tools were also reviewed for clarity, relevance, comprehensiveness, applicability, and understanding. According to the expertise's modifications and the results of the pilot study, some modifications were applied in the form of rephrasing or rewording, and sometimes changing of some questions. Reliability statistics of the study, Cronbach's Alpha was 0.87.

Health educational program:

It was developed and designed as a booklet in Arabic Language by the researcher based on the related literature and expertise opinions.

Content of education program (booklet):

- **Theoretical part:** It was covered the following: definition of myocardial infarction, causes, risk factors, manifestation, diagnosis, line of treatment, complications associated with the disease, and the follow up. Concept of self efficacy and how to build it. Also, it included definition of compliance and strategies to improve patient's compliance.

Practical part: It was covered the following: breathing and coughing exercises, aerobic exercise such as (walking, bicycling, and go up stairs), relaxation techniques as (deep breathing exercises, muscles relaxation of all the body, mental relaxation, meditation), dietary managements and weight reduction, and stop smoking.

Field Work:

- The data was collected throughout two assessment phase. The first phase of assessment was done prior to conducting the teaching program for patients using the tools and the second phase of assessment was done immediately post teaching

program using the same tools. The researcher interviewed patients at CCU on morning and afternoon shifts every day.

- It was necessary for the researcher to introduce himself and explain the purpose of the study for the subjects. The researcher assured that the data collected and information will be confidential and would be used only to improve their health. Also, the data was collected by the researcher using simplified Arabic language.

- Selection of patients, collection of data and implementation of the educational program lasted over a period of 8 months, starting from September 2018 to April 2019, which classified as following: two months pre test (September& October 2018), four months for implementation of the program (from November 2018 to February 2019), and two months post test (from March to April 2019).

- The program was consisted of (16) sessions, one session to identify the objective and the importance of the program. One third of the sessions (5) were theoretical, and two third (10) were practical. Each interview took approximately 30 to 45 minutes in each session.

- The sessions began with one session for a formative assessment to show the patient's condition (interviewing the patient regarding personal data and identification), and one session for demonstrating the importance of the education program and for assessing the patient's self efficacy and compliance by filling patient's efficacy and compliance questionnaire before the program.

- In each session, ten minutes pre and post are directed for re-demonstration and implemented in simplified way by using paper board, pictures, videos, booklet, and through

group discussion to identify self-reflection and evaluate with feedback and oral exam.

• In practical session the researcher had demonstrated the different related procedures for patients by using real materials within 30-45 minute and explained the rationale for each item in the procedure to identify self-reflection, evaluate with return demonstration and post-test.

• In the 16th session (post-test) included the reassessment of patient's self-efficacy after applying the education program. Questionnaire about self-efficacy were filled within 20-30 minutes and compliance questionnaire filled by patients and by researcher for illiterate patients within 20 minutes.

Pilot study:

A pilot study for data collection was carried out in order to test whether the tools are clear, understandable, feasible, applicable, and time consuming. Ten percent from the total sample size that equal five patients were selected randomly from cardiac units to participate in testing of the tools. The time required for ending the questionnaire was ranged between 20 to 30 minutes. Those patients were not excluded from the study because of no modifications in the tool.

Administrative design:

To carry out this study, the necessary approvals were obtained from the Faculty of Nursing and submitted to general director of Zagazig University Hospitals. Then Permission to carry out the study was obtained from the head of chosen setting after explaining the purpose of the study and a verbal consent was obtained from patients for participation in the study.

Ethical consideration:
At the initial interview, each potential subject was informed about the nature, purpose, benefits of the study, and that participation is voluntary. Confidentiality and anonymity of the subjects were also assured through coding of all data. The researcher assured that the data collected, and information will be confidential and would be used only to improve their health and for the purpose of the study.

Statistical analysis:

All collected data were organized, categorized, tabulated, entered, and analyzed by using SPSS (Statistical Package for Social Sciences); a software program version 20, which was applied to frequency tables and statistical significance. The statistical significance and associations were assessed using, the arithmetic mean, the standard deviation (SD), Pearson chi-square test (X^2) and Pearson Correlation (r) to detect the relation between the variables. Significance of the result: No significant (NS): If $P > 0.05$, Significant (S): If $P < 0.05$, Highly significant (HS): If $P < 0.01$.

Limitation of the study:

• Two subjects were dropped from the study during post program; they died.
• As the general health of the patients were critical, the researcher needed to give the program to each patient separate while he staying at his bed and giving the program in different sessions, that made the researcher need a lot of time and frequent meeting to complete the study.

Results:

Table 1: Showed that the age of studied patients ranged between 33- 65

years with Mean ± SD 58.21±11.12, with disease duration 1-15 years with Mean ± SD7.45±3.5. And 60.6% of studied patients were male, and 39.4% were females. Also, 78.8% of them were married, and 39.4% were illiterate and intermediate educational level, 42.4% didn't work. Regarding patient medical history, 60.6% of studied patients had acute onset of disease, 60.6% of them taken nitroglycerine, 81.8% had no surgical operations, 100.0% of studied patients had hypertension and diabetes, and 54.5% of them were smokers, 90.9% of studied patients not perform any exercises, 87.9% didn't have family history of disease.

Table2: Illustrated that there was significant increase in patient' self efficacy of regular exercise, getting information about disease, obtaining support, communication with physician, management of disease, routine home activities, recreational and social activities, and manage depression post program than before with Mean ± SD 23.64±5.41, 7.69±1.79, 15.93±3.68, 25.89±5.88, 92.27±19.77, 23.73±5.79,

16.06±3.89, 51.53±8.91 and statistical significant difference P 0.00

Table 3: Cleared that there was statistical significant improve in patient's compliance regarding diet regimen, treatment regimen, and lifestyle modifications post program than before with mean ±SD 8.06±2.30, 9.69±1.97, 10.48±2.58 with statistical significant difference P 0.00

Table 4: Identified that 93.9% of studied patients had satisfied self efficacy post program and 75.8% of studied patients had adequate compliance post program than before with a statistical significant difference P 0.00.

Table 5: Clarified that there was a statistical significant relation between marital status (widow) and inadequate patient' compliance with P0.02

Figure1: Showed that there was a strong positive correlation between total self efficacy score and total compliance score r 0.684 with P 0.00

Table 1: Distribution of Socio-demographic and medical history of studied patients (n= 33)

		N	%
Age	Mean ± SD	58.21±11.12	
	Median (Range)	62.0 (33-65)	
Duration of disease	Mean ± SD	7.45±3.5	
	Median (Range)	4.0 (1-15)	
Sex	Male	20	60.6
	Female	13	39.4
Marital	Married	26	78.8
	Widow	7	21.2
Education	Illiterate	13	39.4
	Intermediate	13	39.4
	High	7	21.2
Occupation	Work	10	30.3
	Not work	14	42.4
	Retirement	9	27.3
Social status	Low	9	27.3
	Moderate	18	54.5
	High	6	18.2
Onset	Acute	20	60.6
	Chronic	13	39.4
Drugs	Nitroglycerin	20	60.6

	Aspirin	4	12.1
	Beta blockers	7	21.2
	CA c blockers	2	6.1
	All medications	7	21.2
Surgery	No	54	81.8
	Stent	4	6.1
	Balloon	8	12.1
Chronic diseases	HTN	33	100.0
	DM	22	100.0
	OBESE	10	15.2
	Stress	11	16.7
Smoking	No	15	45.5
	Yes	18	54.5
Exercises	No	30	90.9
	Yes	3	9.1
Family History	No	29	87.9
	Yes	4	12.1
	Total	33	100.0

Table 2: Mean Score of patients' Self efficacy before and after program (n= 33)

Self efficacy	Time	Mean	Std. Deviation	P
Regular Exercise	Pre	10.08	9.53	0.00**
	Post	23.64	5.41	
Getting information about disease	Pre	4.09	2.45	0.00**
	Post	7.69	1.79	
Obtaining support	Pre	12.99	6.87	00.00**
	Post	15.93	3.68	
Communication with physician	Pre	15.08	7.96	0.00**
	Post	25.89	5.88	
Management of disease	Pre	46.13	31.65	0.00**
	Post	92.27	19.77	
Routine home activities	Pre	12.07	7.13	0.00**
	Post	23.73	5.79	
Recreational and social activities	Pre	6.96	2.53	0.00**
	Post	16.06	3.89	
Manage depression	Pre	22.39	10.54	0.00**
	Post	51.53	8.91	
Total self efficacy	Pre	129.79	78.66	0.00**
	Post	256.74	55.12	

** $P \leq 0.05$ (high significant)

Table 3: Mean Score of patients' therapeutic compliance before and after program

Therapeutic compliance	Time	Mean	Std. Deviation	P
Dietary regimen	Pre	5.30	3.13	0.00**
	Post	8.06	2.30	
Treatment regimen	Pre	9.18	1.75	0.26
	Post	9.69	1.97	
Life style modifications	Pre	7.48	3.42	0.00**
	Post	10.48	2.58	
Total compliance	Pre	21.96	6.62	0.00**
	Post	28.24	5.03	

X^2 Chi-square test $P \leq 0.05$ (significant)

Table 4: Distribution and percentage of patient's self efficacy and compliance pre and post program (n=33)

Item	Time		P
	Pre	Post	

Self efficacy	Un satisfactory	N	28	2	0.00**
		%	84.8%	6.1%	
	Satisfactory	N	5	31	
		%	15.2%	93.9%	
Compliance	Not adequate compliance	N	25	8	0.00**
		%	75.8%	24.2%	
	Adequate Compliance	N	8	25	
		%	24.2%	75.8%	
Total		N	33	33	
		%	100.0%	100.0%	

P ≤ 0.05 (significant)

Table 5: Relation between patient's compliance and socio-demographic characteristics (n= 33)

			Compliance		Total	X^2	P
			Not Adequate	Adequate			
Age	Mean ± SD		55.13±14.32	60.9±12.1		1.91	0.06
Sex	Male	N	4	16	20		
		%	50.0%	64.0%	60.6%		
	Female	N	4	9	13	0.49	0.48
		%	50.0%	36.0%	39.4%		
Marital	Married	N	4	22	26		
		%	50.0%	88.0%	78.8%		
	Widow	N	4	3	7	5.23	0.02*
		%	50.0%	12.0%	21.2%		
Total		N	8	25	33		
		%	100.0%	100.0%	100.0%		

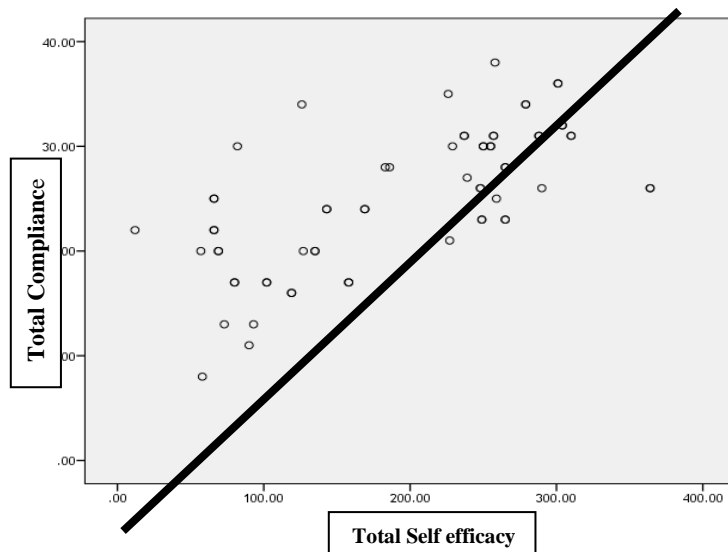*X^2 Chi-square test   P ≤ 0.05 (significant)*

Figure 1: Correlation between total self efficacy score and total compliance score

Discussion

The results of the current study showed that the age of studied patients

ranged between 33- 65 years with Mean ± SD 58.21±11.12, This finding was agree with **Ahmed (2016)** who found in thesis entitled " Effect of an Educational Program on Self-Efficacy of Patient with Myocardial Infarction in Faculty of Nursing, Zagazig University, Egypt" that the age of the studied patients ranged from 40-75 years old with the mean of 56 years. In the same line with **Ahmed (2011)** who found in study entitled "Effect of self-care program on quality of life for patients with myocardial infarction in Faculty of Nursing, Ismalia, Suez Canal University, Egypt" that the mean age of the studied patients is fifty four years old. This could be due to high prevalence of MI among age group.

Concerning gender, the results of the present study revealed that about two third of studied patients were male. This was in accordance with **Ahmed (2016)** who found that more than three quarters of the patients were males. Also, it was consistent with **Farag (2013) &Marzouk (2015)** who found in his study on "Psychological assessment of patients with Myocardial Infarction at cardiac outpatient clinic of Assiut university Hospital, Faculty of Nursing, Assiut University" that three fourths of the studied patients are male moreover, **Ahmed (2011) & Angerud, et al., (2015)** who clarified in study entitled" The Process of Care-seeking for Myocardial Infarction Among patients with diabetes", that two thirds of the studied patients were males. The findings of the current study could be related to eating and occupational habits, smoking which mainly prevalent among males, in addition to family burden.

Regarding patient medical history, about two third of studied patients in current study had acute onset of disease, all of studied patients had hypertension and diabetes. More than half of studied patients were smokers. These findings were supported by **Ahmed**

(2011) &Tantawy (2013) whom reported the same result. The most common disease is hypertension that present in less than half of the studied patients followed by diabetes mellitus which present in more than one third of the studied patients, in addition to obesity and presence of other chronic illness. This result is supported by **(National Center for Health Statistics, 2012)** stated that high blood pressure (hypertension)alone or in association with obesity, smoking, high blood cholesterol levels or diabetes increases the risk of myocardial infarction. In addition, **Amsterdam, Wengern, & Brindis, (2014)** stated thatobesity increases strain on the heart, raises blood pressure, cholesterol level and the risk for MI.

Regarding exercises the present study revealed that the most of studied patients didn't perform any type of exercises. This agreed with **Ahmed (2016)** who mentioned that less than three quarters of the studied patients are not practicing any exercise and this explains that lack of activity increase the risk of MI. This finding is supported by **Kim, Diez, & Kiefe** **(2010)** who stated that regular exercise reduces the risk of coronary artery disease and Myocardial Infarction by controlling blood cholesterol levels, decreasing the risk of obesity or diabetes, and lowering blood pressure. In the same line with **Abdelhameed (2013**) who found that the majority of the studied subjects do not practice any sports. This could be related to lack of awareness of the importance of exercise and old culture that cardiac patients not supposed to do any activity.

The current study showed significant improvement in patients' self-efficacy after implementation of the health education program. None of the studied subjects had satisfied self-efficacy in pre program phase. This deficiency could be attributed to the low education

grades, in addition to the lack of knowledge.

The results of the present study illustrated that there was significant increase in patient' self efficacy of regular exercise, getting information about disease, obtaining support, communication with physician, management of disease, routine home activities, recreational and social activities, and manage depression post program than before. This finding was in the same line with **Taha, Zaton & Abd Elaziz (2016)** who found in study entitled "Impact of health educational guidelines on the knowledge, self-management practice and self-efficacy of patients with type-2 diabetes" that health educational intervention guidelines led to significant improvements in patients' self-efficacy. This could be due to the effectiveness of applied health education program.

The results of the present study cleared that there was statistical significant improvement in patient's compliance regarding dietary regimen, treatment regimen, and lifestyle modifications post program than before. This was in accordance with **Taha, Ibrahim, & Elsayed, (2018)** who mentioned in thesis entitled "Factors Affecting Compliance with Therapeutic Regimen for Patients with Coronary Artery Bypass Graft: Suggested Nursing Guidelines" Faculty of Nursing, Zagazig University, Egypt that, about one quarter of studied patients had a compliance behavior with therapeutic regimen. This result disagreed with **Gendy, Mahrous, & Ghatey, (2013)** who reported in a study about "Guidelines for the Factors Affecting Compliance of Patients with Coronary Artery Bypass Graft toward Therapeutic Regimen" in Saudi Arabia, that the majority of the studied patients had poor compliance toward therapeutic regimen.

Regarding patients` compliance to diet regimen, results showed that there was a statistically significant improvement in healthy diet intake post program. This result was in accordance with **Argyriou et al. (2011)** who recognized that most patients controlled their diet after implementation of the educational program in terms of saturated fat restriction, salt restriction and increasing vegetables and fruit intake.

Regarding patients` compliance to treatment, there was a statistical significant increase in mean score of compliance post program. This finding was disagree with **Abu Shuaib (2014)** who mentioned in thesis entitled "Effect of an educational program on compliance of myocardial infarction (MI) patients in Gaza Strip, Faculty of Nursing, Cairo University, Egypt" that the high cost of drugs and forgetfulness were the main reasons of non-adherence to medication.

Concerning patients` compliance to lifestyle modification, results showed a statistically significant improvement post program. This finding was supported with **Sibai et al. (2013)** who illustrated in a study that patients who are oriented with every-thing about the disease and physical exertion are more likely to engage in activities promoting physical well-being and enhancing daily living activities. In the same line with **Nazeh et al., (2017)** who mentioned that there was a statistically significant improvement in patient's compliance post program.

Results of the present study revealed that there was a statistical significant relation between not adequate level of compliance and marital status. This agreed with **Ibrahim & Mahmoud (2012)** in Taibah University in a study bout "Compliance with treatment of patients with hypertension in Almadinah Almunawwarah: A community-based study", who reported that there is high significant relation between socio-economic factor and level of compliance.

The results of the current study clarified that there was a strong positive correlation between total self efficacy score and total compliance score. This meant that people are more likely to engage in certain behaviors when they believe they can execute those behaviors successfully (self-confidence). This result was in the same line with **Okuboyejo, Mbarika, & Omoregbe, (2018)** who found that there was an indirect relationship between medication adherence self-efficacy and medication adherence behavior.

Conclusion:

On the light of the current study results, it can be concluded that, there was a statistical significant increase in patient's self efficacy and improvement of therapeutic compliance regimen after implementing the effective health educational program.

Recommendations

The Based on findings, the study recommended:

- A simple written guidelines for patients with myocardial infarction should be available in units that provide care, to be provided to newly admitted patients.
- Establishment of cardiac rehabilitation unit for patients with heart diseases.
- Self-efficacy for patients with myocardial infarction should be considered and evaluated during the plan for treatment of patient with MI by trained nurse.

Financial support:

Conflict of interest:

There is no Conflict interest.

Author contribution:

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