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Research Article

The effect of cardiac rehabilitation on anxiety in patients with myocardial infarction

Zahediniya, F[1], Zeinijahromi, M[2]*.

and Ahmadi, F[3]

[1]Msc of nursing, Research Center for Noncommunicable Diseases,
Jahrom University of Medical Sciences, Jahrom, Iran
[2]Msc of medical-surgical Nursing, Research Center for Noncommunicable Diseases,
Jahrom University of Medical Sciences, Jahrom, Iran
[3]Nursing, paramedical and faculty member of Jahrom University of Medical Sciences, Jahrom, Iran
*Corresponding author: M.zeinijahromi, Msc of medical-surgical Nursing,
Research Center for Noncommunicable Diseases,
Jahrom University of Medical Sciences, Jahrom , Iran Email:m.zeini@jums.ac.ir
Tell:+98 917 891 1369

ABSTRACT

Introduction: One of the most common and important psychological responses of patients with acute myocardial infarction is anxiety, which has a very negative effect on the course of the disease and the stage of physical and mental recovery of patients. The aim of this study was to determine the effect of cardiac rehabilitation on anxiety in patients with myocardial infarction

Methods: This is a quasi-experimental study in which 120 patients with myocardial infarction admitted to the CCU department of hospitals affiliated to Jahrom University of Medical Sciences were randomly divided into two groups (60 in each group)) Interventions and controls. In this study, the control group received the usual care and for the intervention group, the rehabilitation program was performed for 3 months. The data gathering tool was a checklist for demographic information and the Spielberger anxiety inventory that was completed at the beginning of admission and 3 months after discharge. The data were analyzed using SPSS version 19 and chi-square, t-test and independent t-test. Descriptive statistics (mean, standard deviation, and variance) were used to analyze the data.

Results: The results showed that the implementation of the cardiac rehabilitation program caused a significant difference between the intervention and control groups in the amount of anxiety (P = 0.001). Also, the anxiety level in the control group was not significantly different from the start of the cardiac rehabilitation program (P = 0.12). But in the intervention group, this difference was significant. (P = 0/001).

Conclusion: Implementation of cardiac rehabilitation can reduce anxiety in patients with myocardial infarction, which can affect the care and recovery process of patients.

Keywords: myocardial infarction, anxiety, rehabilitation, education

INTRODUCTION:

The world of medicine now faces chronic illness and coronary artery disease that can lead to myocardial infarction in the final stages (1). In America, one and a half million people die of myocardial infarction each year, of which 400,000 die (3, 2). In Iran, from a total of 700 to 800 deaths a day, 317 of them are due to cardiovascular diseases, of which 166 are due to myocardial infarction, which occurs at age 35 (4). Myocardial infarction is caused by a decrease in the flow of coronary arteries due to plaque rupture of atherosclerosis, and

subsequent vascular obstruction due to thrombosis, in which part of the myocardium is permanently lost due to the reduction of blood flow or its discontinuity (5). Myocardial infarction, in addition to high mortality, imposes a huge burden on health systems in countries. In 2008, direct and indirect costs of cardiovascular disease in the United States were estimated at $ 4,753 billion. In Iran, an annual subsidy of 15 billion Rials is spent on medical treatment and 50 million dollars is spent on purchasing medical equipment (6).

Acute myocardial infarction with high physical problems such as cardiogenic shock, cardiac rupture, ventricular aneurysm, fatal dysrhythms, ischemia and stroke. Effective factors such as: Individual and social characteristics of individuals in the prevalence of physical problems after acute myocardial infarction have been well studied, but few studies have been done on the psychological problems of these individuals (7).

Anxiety is one of the most common and important psychological responses in patients with myocardial infarction, which has a very negative effect on the course of the disease and the stage of physical and mental recovery, and sometimes even after the acute phase of the disease (8). The cause of anxiety can be due to hospitalization, fear of death, heart surgery, recognition of a person who has died of the same illness in the past, stroke and, in general, fear of the unknown (9). The prevalence of anxiety after myocardial infarction is between 20% and 60%, which affects the quality of life and decreases interest in participating in rehabilitation programs (10).

Anxiety causes an increase in blood pressure, the onset of fatal dysrhythms, circulatory system disorders, and a reduction in the immune system, which is dangerous to myocardial infarction patients and exacerbates ischemia and cardiac necrosis [11]. With reference to the aforementioned, anxiety reduction in patients with myocardial infarction It is important. Nurses, as one of the main components of the health team, play a very important role in reducing anxiety in patients with myocardial infarction. Nurses can play their role by educating patients and also helping patients to participate in rehabilitation programs. Cardiac rehabilitation is one of the areas where nurses can play an important role in the health of the patient. The ultimate goal of cardiac rehabilitation is to restore and maintain the optimal physiological, psychological, social and occupational status of an individual. Cardiac rehabilitation with goals focused on exercise, lipid control, high blood pressure control and cessation of smoking can reduce cardiovascular mortality rates.

Also, improving practical ability, suppressing myocardial ischemia, slow down and delay the progression of coronary atherosclerosis, and reduce the risk of future events and deaths. The cardiac rehabilitation program can be implemented as one of the non-pharmacological interventions in cardiac patients and aims at preventing recurrence of cardiac attacks and hospitalization of cardiac patients (12). This program has led to a significant reduction in the specific mortality rate due to heart disease. This is possible by modifying the risk factors for coronary artery disease and health behaviors (13). A cardiac rehabilitation program is needed immediately after the coronary artery disease And start with the patient at the time of admission (14). Thus, cardiac rehabilitation is a standard care that should be combined with the treatment plan for coronary artery disease patients (15). In general, cardiopulmonary resuscitation is a secondary prevention program with exercise programs at the center and at home, as well as education about the disease and how to correct risk factors (16).

Training as part of a rehabilitation program is a process that increases the knowledge of the individual and ultimately changes his behavior, which is essential for the maintenance and improvement of health. Training increases self-confidence in the patient, reduces anxiety, depression and also increases the acceptance of treatment by the patient. Therefore, education as a part of cardiac rehabilitation should begin immediately after the diagnosis of the disease for the patient and nurses as the leader in the treatment team can play a very important role in the implementation of patient education (17). Several studies have shown that the provision of information and training increases patient

awareness of clinical interventions and reduces Anxiety is in him (19, 18). Basampour conducted a lecture on 100 patients waiting for an open heart surgery. The results showed that lecture-induced training reduced anxiety in the intervention group compared to the control group (18). Cardiac rehabilitation programs for patients with myocardial infarction have been neglected due to the many studies in other countries and the importance of this disease, and there are only very sporadic and non-coherent references. (20)

As currently patients with myocardial infarction During my hospitalization and after discharging from hospital, myocardial infarction does not receive a syllabus of educational and rehabilitation, and researchers' experiences consider this important. The rehabilitation program was developed based on aerobic training and aerobic exercise, and the results of an educational and rehabilitation program, in theory and practice, in patients with myocardial infarction, examined the results of anxiety between intervention and control groups.

METHODS:

This is a quasi-experimental study. The research population includes patients with myocardial infarction referring to hospitals affiliated to Jahrom University of Medical Sciences. The samples of this study were 120 patients with acute myocardial infarction, which according to the criteria for entering the study in both intervention and control groups (60 subjects each). Criteria for entering the study age of 70-70 years, definite diagnosis of heart attack for the first time by the cardiologist, not having known psychiatric disorders, and psychiatric treatment based on patient records, lack of any cognitive, speech or auditory disorder, lack of pain During training, access to telephone, severe chest pain, and full satisfaction to participate in the study. Also, the emergence of critical conditions for each of the samples in the study period and the reluctance to cooperate with the samples to continue to participate in the study were criteria for withdrawal from the study. After selecting the samples, they were given the necessary explanations about the confidentiality of the information, the goals, stages and duration of the study, and they filled out the informed consent form.

The method of this study was to determine that the patients referred to the hospital were randomly assigned to the control group according to the criteria for entering the study. At first, the patients were admitted to the demographic questionnaire and the Spielberger anxiety inventory, and this Patients received current care and education.

After completing the sampling from the control group, the patients were hospitalized according to the study conditions in the intervention group. In the intervention group, after completing the demographic and spill-burger anxiety questionnaire, a 12-week cardiac rehabilitation program was performed for these patients. The rehabilitation program consisted of two parts of aerobic training and aerobic exercise. The education section, in this case for patients after patient stabilization, was presented during two 2-hour sessions, face-to-face during hospitalization and on discharge. Educational content about the risk factors for heart disease and myocardial infarction, their clinical manifestations.

Treatment and complications of myocardial infarction, warning signs for heart attack, post-myocardial infarction and lifestyle changes including weight loss, cessation of smoking and dietary considerations, as well as relaxation methods. Was. The training was based on the American Heart Association's guidelines for education and rehabilitation for patients with myocardial infarction (21). He was also given to patients at the time of discharging a booklet containing all the materials taught. After discharge, patients were followed up by the 4th week and, if there was a need for guidance. The second part of the rehabilitation program included an aerobic exercise program and exercise.

This exercise program was performed after the fifth week after discharge. The exercise program lasted 50 minutes 3 times a week. The exercise program consisted of 10 minutes of warming, 30 minutes of isometric movements or walking, and 10 minutes of chilling in a gym and supervised by the researcher. The film and how the exercises were taught to the patient and his

fellows. At the end of the 12th week, the Spielberger anxiety inventory questionnaire was again completed from both the control and intervention groups and the results were analyzed and evaluated. The data gathering tool in this study included a checklist of demographic information (age, sex, marital status, educational level, housing, the presence of educated people in the family, income, access to hospital, lifestyle) and the Spielberger anxiety inventory. The Spielberger's apparent and hidden anxiety questionnaire consists of two parts: explicit anxiety and hidden anxiety. The apparent anxiety test (state of mind in the present moment) and anxiety or an adjectival (common sense of the person most often) (22). Each part of the questionnaire contains 20 short questions that are set up in a positive and negative manner, and each question has 4 options, each option weighing between 4-1. Therefore, the anxiety scores between people range from 20 to 80 percent. In this study, a re-test method was used to survey the questionnaire.

In order to calculate the reliability coefficient with this method, a measuring instrument was first implemented on a 10-member patient group of patients with myocardial infarction and then in a two-day interval under the same conditions, the test was performed on the same group. The scores obtained from the two tests , Were examined and their correlation coefficient was calculated (r = 0.91) and alpha = 0.825. Reliability of the instrument was confirmed.

RESULTS:

SPSS software version 19 was used to analyze the data. Descriptive statistics (frequency, mean, standard deviation) and inferential statistics (chi-square, independent t-test and pair t test) were used for data analysis. The results of this study in relation to demographic variables showed that out of a total of 120 examined patients, a total of 8.75% were male and 1/21 female. The average age of the participants in the study was 33.56 and most of them (93.3%) were married. The most frequent participants were illiterate (65.51), also had average income (56.6), easy access to the hospital (56.6) and the family (5.88). Using chi-square test, the prevalence of gender, marital status, educational level, type of housing, the presence of educated people, income level, access to hospital and lifestyle were compared between the control and intergroup groups. The results showed that between the control and There is no significant difference in intervention, and both groups are homogeneous. Also, in the mean age of patients with independent T-test, the two groups were similar in age and there was no significant difference between the mean age of patients in the control group and the mean age of the intervention group (Table 1).

The anxiety level was evaluated based on the Spielberger questionnaire in two parts of the state anxiety and trait anxiety. The results of independent t-test for state anxiety showed that at the time of admission, there was no significant difference between the anxiety score of the control and intervention groups (P = 0/14). The results of the 12-week post-discharge anxiety scan, using independent t-test, showed a significant difference between the control and intervention groups (P = 0.001) (Table 2). The findings of the study on adolescent anxiety by independent t-test showed that there was no significant difference between the control and intervention (P = 0/13) between the control and intervention in admission test.

The results of anxiety trait test 12 weeks after discharge using independent t-test showed that there was a significant difference between the control and intervention groups (P = 0.001) (Table 3). Also, the results of state and control anxiety scores in the control group at admission and 12 weeks after discharge by using t-test showed that there was a decrease in the state of anxiety and trait, but there was no statistically significant difference (P = 097) (P = 0.12) (Table 4). These findings showed a significant difference in the intervention group (P = 0.001) (P = 0.001) (Table 5).

Table 1: Demographic characteristics of the subjects in two groups of control and intervention

	control		Intervention			
P-value	Percent	frequency	Percent	frequency	Frequency classification	
0/09	68/7	38	89/1	51	Male	gender
	31	22	16/8	9	female	
0/73	95	54	95	55	Married	marital status
	0	0	0	0	Single	
	1	1	1	1	divorced	
	4	4	4	4	Wife's death	
0/47	56	34	52	32	Illiterate	Level of education
	25	16	23	14	Elementary	
		7	11/5	7	guidance	
	8/75	5	8	4	high school	
	5/2	2	6/75	3	University	
0/55	59	34	51	30	easily	How to access the hospital
	26/4	22	28	24	With some difficulty	
	12/1	4	16	6	hardly	
0/92	24/53	14	22/5	12	Good	Income
	58/3	36	60	38	medium	
	19/5	10	19/5	10	Weak	

Table 2: Comparison of the state of anxiety scores during admission and 12 weeks after implementation of the designed nursing protocol in the intervention and control group

P-value	intervention group	control group	variable
0/14	36/01+4/85	34/95+2/94	Acceptance time
0/001	35/7+4/82	33/04+4/8	Three months after discharge

Table 3: Comparison of trait anxiety mean score at admission and three months after implementation of nursing protocol designed in intervention and control group

P-value	intervention group	control group	variable
0/12	29/45+3/65	30/65+3/40	Acceptance time
0/01	27/61+3/65	30/45+3/75	Three months after discharge

Table 4: Comparison of the mean state and trait anxiety scores at admission and three months after discharge in the control group

P-value	**Three months after discharge**	**Acceptance time**	**variable**
0/12	35/4±4/2	**38/9**±5/1	State anxiety
0/97	**29/2**±3/9	**30/1**±4/8	Trait anxiety

Table 5: Comparison of the mean of state and trait anxiety scores at admission time and after implementation of the nursing protocol designed in the intervention group

P-value	Three months after discharge	Acceptance time	variable
0/001	3±1/431/1	34/5±2/8	State anxiety
0/015	27/65±3/2	29/4±3/7	Trait anxiety

CONCLUSION:

Anxiety is one of the most common and important psychological reactions in patients with acute myocardial in farction, which has a very negative effect on the course of the disease and the stage of physical and mental recovery of patients. The findings of our study showed that the average score of anxiety was 78.34%, in other words, anxiety was mild in general. The aim of this study was to determine the effect of

rehabilitation program for 12 weeks on the anxiety of patients after myocardial infarction. The results of the rehabilitation program showed that the level of anxiety in the intervention group was significantly different from that of the control group. (P = 0.001). This means that the level of anxiety in the intervention group is less than that of the control group, although there was no significant difference between the two groups before the reprogramming program (p = 0/14). In the study of Katayon Rabiei et al., The results of the effect of rehabilitation on the anxiety of the patients after 12 weeks showed that the anxiety level was significantly different with the time before the onset of rehabilitation, which is consistent with the findings of the present study (23). In the present study, the results At the end of the eighth week, anxiety showed no significant difference with the beginning of the study, perhaps due to the duration of cardiac rehabilitation. However, in another study by Frattis et al., The effect of 4-week cardiac rehabilitation programs on the anxiety of patients with myocardial infarction It was shown that the level of anxiety had a significant difference(24). In the study of Bassampour, the effect of relaxation methods on the anxiety of patients with myocardial infarction was investigated with different relaxation methods. Results showed that the anxiety level had a significant difference compared to the beginning of the course, which can be correlated with the results of the rehabilitation program with partial relaxation Is equal (25). In a study by Yeganeh and colleagues, the effect of different educational methods on the anxiety of patients with myocardial infarction was investigated. The results showed that the anxiety level in each of the three teaching methods (face-to-face) is a significant reduction in patient anxiety. These results can be consistent with this study and the training program for cardiac rehabilitation (26). In a study by Eldrich and colleagues called cardiac rehabilitation and myocardial infarction, patients with anxiety symptoms were randomly divided into two groups of normal care and rehabilitation group for 8 weeks and followed up for 12 weeks. The results showed that there was no significant difference between the two groups in terms of anxiety scores after the completion of the study, which is not consistent with our study. The reason for this difference was the choice of sample, questionnaire and sample size (27). In the study of Younas et al., The effect of 6-week cardiac rehabilitation on the anxiety of patients showed that the anxiety level in these patients decreased compared to the time of onset of rehabilitation, and this decrease was statistically significant. These results are in line with our study (28). In the study of Carole Levy, who reviewed the effect of cardiac pacemaker on psychological factors such as depression, anxiety and long anxiety and anger, the results showed that cardiac rehabilitation significantly reduced anxiety in patients. The results are similar to the present study (29). Since anxiety in patients with myocardial infarction can be considered as a barrier to improvement of patients and cause many problems for these patients, efforts to reduce the anxiety of these patients is necessary. The results of this study showed that cardiac rehabilitation program based on training, exercise and aerobic activity can reduce anxiety in patients with myocardial infarction. Therefore, it is suggested that the cardiac rehabilitation program be used as a low cost and non-pharmacological method to reduce the anxiety of patients with myocardial infarction. It is also suggested that the outcome of this rehabilitation program be reviewed for other diseases.

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