



THE EFFECT OF NEED-BASED INDIVIDUAL EDUCATION ON DEPRESSION AND ANXIETY IN PATIENTS WITH CORONARY ARTERY DISEASE FOLLOWING TRANSITION FROM THE CARDIAC CARE UNIT (CCU)

Shima Ghayour¹, Hojatollah Yousefi^{2*}, Mahin Moeini³, Davood Shafie⁴, Amir Shirvani⁵

1. *Nursing Graduate Student, Faculty of Nursing and Midwifery, Isfahan University of Medical Science, Isfahan, Iran.*
- 2,3. *Associate Professor, Ulcer Repair Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran*
4. *Fellowship in heart failure and transplantation, Heart Failure Research Center, Isfahan Cardiovascular Research Institute, Isfahan University of Medical Sciences, Isfahan, Iran.*
5. *MA in Clinical Psychology, Isfahan, Iran*

ARTICLE INFO

Received:

03th Jun 2017

Accepted:

29th Nov 2017

Available online:

14th Dec 2017

Keywords: *Need-based individual education, Depression, Anxiety, Coronary artery disease, Transfer from CCU*

ABSTRACT

Introduction and Purpose: Coronary artery diseases are the most common cardiovascular diseases and the most common causes of death in the world. Anxiety and depression are of psychological problems after heart surgery and hospitalization and also are the underlying factors and outcomes of coronary artery disease. Hence in line with reducing anxiety and depression, presenting information and educating the patients can be considered as the critical components of nursing care. Patient education is done through various processes that individual and face-to-face modes are of the most effective methods in this field. This study was conducted in order to determine the effectiveness of need-based individual education on anxiety and depression in patients with coronary artery disease during transition from the cardiac care unit in the selected hospitals of Isfahan University of Medical Sciences.

Materials and Methods: This research study is a clinical trial that is derived from the nursing master's thesis. Sixty-four patients with coronary artery disease, who were hospitalized in the cardiac care unit of Isfahan Shahid Chamran hospital, were randomly divided into two experimental and control groups. Data collection was carried out before and immediately after the intervention. Data collection tools were demographic characteristics and patients' information questionnaire, Cardiac Patients' Learning Needs Inventory and Hospital Anxiety and Depression Scale.

Findings: The results revealed that patients' extensive need of education and their high levels of anxiety and depression before education, that these factors can exacerbate the disease symptoms and make their future care harder. After the intervention, scores of need and the level of anxiety and depression in the experimental group were significantly lower than the control group.

Conclusion: Due to the beneficial results of the educational intervention on reducing anxiety and depression in patients with coronary artery disease, this case should be treated as the objectives of caring staff, thereby the length of hospitalization will be reduced and patients' rehospitalization will be prevented and their life quality will be increased.

Copyright © 2013 - All Rights Reserved - Pharmacophore

To Cite This Article: Shima Ghayour, Hojatollah Yousefi, Mahin Moeini, Davood Shafie, Amir Shirvani, (2017), "The effect of need-based individual education on depression and anxiety in patients with coronary artery disease following transition from the cardiac care unit (ccu)", *Pharmacophore*, 8(6S), e-1173157.

Introduction

Disease and its consequences has been the focus of attention of communities [1]. Today, non-communicable diseases have been widely spread due to the phenomenon of modernization of societies, technological advances and population density in urban areas, lifestyle changing and tendency of people to bad habits [2]. Among these diseases, cardiovascular diseases can

be mentioned, which in addition to deaths, have the individual, familial, social and financial consequences [1]. According to the World Health Organization in 2012, the highest proportion of deaths from non-communicable diseases (about 48%), was due to cardiovascular diseases [3]. Cardiovascular disease, such as coronary heart disease (CHD), are among the leading causes of death in western countries and in Iran. These disorders are responsible for more than 25% of all deaths worldwide [4] and it is predicted that by the year 2030 it will continue to allocate this rating to itself [5]. It is anticipated that the number of deaths due to cardiovascular disease will be increased from 17 million in 2008 to 25 million in the year 2030 [3]. Statistical evidences in Iran indicate that the prevalence of coronary artery disease and its mortality is increasing, so that in 2005, these diseases were the leading cause of death in people over 35 years and was the cause of 40 percent of the deaths in Iran and every year 120 to 140 thousand people died in the country for this reason, [6].

Since the heart is one of the most important and most sensitive organs of the human body, its damage will affect a person's emotional and spiritual condition [7]. Among the cardiovascular disease complications, anxiety and depression can be mentioned that aggravate and prolong the disability and interfere with treatment and ultimately result in delayed recovery [6]. About 50% of patients with acute coronary syndrome report the symptoms of anxiety that it can be due to hospitalization, fear of death, waiting for heart surgery, knowing someone who died from the same disease in the past, recurrent stroke and a general fear of the unknowns.

Depression have been reported in 20 to 45 percent of patients with acute coronary syndrome and it is considered as one of the heart disease treatment inhibitors, because without diagnosis depression often remain after a heart attack and leads to disease rejection and the patient's motivation to continue treatment will be decreased.

Anxiety and depression after a heart attack aggravate and prolong the illness, interfere with the treatment and the delay the recovery and cause frequent hospitalizations [8]. Studies suggest that depression, anxiety and life stress, are underlying factors of heart disease and other heart disease also leads to the same problems [7].

Evidence suggests that discharge from the intensive care unit such as acceptance in this unit can be traumatic [9]. After the transferring from the special unit to general ward, according to mental statuses, patients experience high levels of anxiety, sleep disorders, depression and post-traumatic stress [10]. Transferring patients to the especial unit when the routine procedure, environment and monitoring of patients without prior notice, preparation or sufficient explanation be changed or stopped, leads to stress and distress in patients. Many patients after leaving the CCU, experience physiological and psychological problems that affect their recovery process. In other words the patients' transferring from coronary care unit to general ward is the most important cause of anxiety that this situation can affect the disease and process of healing [9] and in cases the patient's disease is life-threatening, one can expect extensive emotional and behavioral changes such as anxiety, shock, denial and anger [11]. Although complete physical examination and physical fitness is very important in these patients but the psychosocial and mental readiness appraising are of the most essential nursing cares. What is very important about the mental readiness is educating the patient [12].

Patient education is one of the most important roles of a nurse. Complete and tailored training according to the learning needs of patients, reduce maintenance costs and increase the quality of care. Effective training helps patients to live healthier and more independent and meanwhile patient education can improve health care and reduce the costs [13].

There are several approaches for patient education among which individual or face to face instruction is one of the most powerful ways to influence the patient. Individual training of nurses to patients has helped the patients in controlling the conditions and also creates opportunity of questioning for patients and their families that the patient can ask any questions and matter of concern from nurse and on the other hand nurse with face-to-face contact with the patient, ensures his understanding of the information and observes and gets the reflection of her operations [12].

Providing information and support for patients with myocardial infarction has long been recognized as an important function of nursing and these activities should be patient-centered and based on the patient's learning needs [14]. Several studies indicate that providing information and education lead to an increase in patients' perception of the clinical operations and these factors will reduce their anxiety. In examining the educational needs it must be said that educational need is the gap between what a person knows and what he needs to know and this gap is due to the lack of knowledge, attitude or skill. Assessment of learning needs is very important because the learning needs must be defined and their appropriate content should be prepared based on the patients' knowledge [13].

In most studies about self-perceived needs and concerns of patients after myocardial infarction, information needs have the highest priority; therefore, information must be based on what the patients know or need to learn, meaning that learning process should be based on the needs of each person [15], in a way that leads to change in their behavior [13].

Materials and Methods

This research was a two-group and two-stage clinical trial study that was performed as an assessment before and immediately after the intervention. In this study the effect of need-based individual training programs independent variable on the dependent variables of anxiety and depression in patients with coronary artery disease were studied.

Research population was comprised of patients with coronary artery disease hospitalized in cardiac care unit of Therapeutic Educational Centers in Isfahan in 2015. The sample size was calculated by using the sample size formula, $n =$

$$\frac{2S^2(Z_1+Z_2)^2}{d^2} = \frac{2S^2(1.96+0.84)^2}{0.49S^2} = 32, \text{ as 32 in each group and a total of 64 people.}$$

The participants were selected by convenience sampling and by simple random method they were divided into two groups. Since Isfahan has only one educational specialized heart hospital, one center was considered as the environment of sampling.

Inclusion criteria included: Having diagnosis of coronary artery disease that is confirmed by cardiologist, the ability to communicate verbally, having at least a full course of primary education, not having mental health problems or functional disability (by reviewing the patient's medical file), patient's admission one day before the intervention in cardiac care unit and patient interest in participating in the study. *Exclusion criteria included:* Drug addiction and patient's transmission to another unit earlier than the end of the study period.

Data were collected by the demographic data questionnaire; Cardiac Patients' Learning Needs Inventory and the Hospital Anxiety and Depression scale. Demographic data questionnaire includes questions about age, sex, marital status, education, occupation, and socioeconomic status, type of disease, family history of heart disease, history of hypertension, diabetes and hyperlipidemia, history of hospitalization, history of hospitalization of a family member in a hospital.

Cardiac Patients' Learning Needs Inventory contains 43 items that is organized in eight domains of the introduction to the Coronary Care Unit (CCU), anatomy and physiology, psychological factors, risk factors, information on drugs, information on food, physical exercise and other relevant information. Each inventory item starts with the phrase "I need to know". Answer possibilities range from 1 to 5 according to the level of importance (1 = not important, 2 = somewhat important, 3 = moderately important, 4 = important and 5 = very important). The learning needs are evaluated considering the mean score of each domain, which can range from 1-5. Higher scores reflect greater learning needs [15].

The third part was the Hospital Anxiety and Depression Scale. This questionnaire has 14 items that includes two sections of depression and anxiety. The range of the answers to the questions were ranking and four-mode that a score ranging from zero to three is given to the answer of each question. Thus, any option that represents the highest anxiety and depression gets the score of three and respectively other options receive the scores of 1 and 2, and the choices that represent the lack of depression and anxiety receive zero. Then points of each field were summed and accordingly every person in each area had a score ranging from 0 to 21 that the score between 0 and 7 was normal, 8 to 10 was intermediate and above 10 were identified as cases of disease. The odd questions were used to assess anxiety and the even questions were used to assess depression [12].

The first meeting with patients in the control and experiment groups was done on the second day of patients' admission to the cardiac care unit [9]. During the meeting, the personal characteristics form and disease information, cardiac patients' learning needs inventory and hospital anxiety and depression scale for patients in both groups was completed by the self-report and questioning by researcher methods.

Intervention in experimental group, when the patient was hospitalized in coronary care unit, depending on the learning needs of individual patients in morning and afternoon shifts was done in four 30-minute sessions by individual and face to face method with questions and answers on, accompanied by booklets. At the end of each session the booklet with regard to the content of the meeting was given to each individual that after reading it in cases of any questions about the content of the meeting they could write their questions on a piece of paper and ask at the next meeting. Post-test data collection, was done in control group and experimental group on day of transfer from CCU and the learning needs inventory of cardiac patients and hospital anxiety and depression scale was completed by patients.

Data analysis was done by Chi-square, Mann-Whitney (for investigating the demographic differences in the intervention and control groups), paired t (for comparing the mean difference of learning needs, anxiety and depression before and after the intervention) and independent t test (to evaluate the difference between the mean scores of learning needs, anxiety and depression) in SPSS 17software Table 1.

Table 1: The content of training sessions

Sessions	Topics	The content of sessions
The 1st session	Introducing the CCU section Familiarity with the anatomy and physiology of the heart	<ol style="list-style-type: none"> 1. Familiarity of the patient and his family members with the physical environment and the laws of the CCU section, the reason for hospitalization in this the section, conducted tests duration the hospitalization and the reasons for limiting patient's activity, understanding the differences between the CCU and post CCU. 2. Patient and his family familiarity with the reasons of chest pain, the heart function, Causes of heart attack, The events during a heart attack and recovery process after a heart attack

The 2nd session	Expression of psychological factors and risk of heart attack	<ol style="list-style-type: none"> 1. Familiarity with the psychological responses of heart disease, the effects of stress, the effect anxiety and depression on the heart and ways to deal with 2. Familiarity with risk factors involved in the occurrence of heart attack, How these factors influence the hearts and the applicable measures to reduce the incidence of heart attack
The 3rd session	Providing information about drug regimen and diet of patients	<ol style="list-style-type: none"> 1. Familiarity with the importance of drug treatment, carried out drug treatment, symptoms and care 2. Familiarity with effect of diet on heart disease, dietary restrictions of heart and the need to expressing the adaptation to a new diet
The 4th session	Providing information about physical activity and other information related to heart disease	<ol style="list-style-type: none"> 1. Familiarity with limitations of physical activity after a heart attack, The reason of physical limitations, the issues which indicate increasing of the physical activity and onset of patient's sexual activity 2. Familiarity with the pulse control, signs and symptoms of heart attack and congestive heart failure 3. Familiarity with the necessary tests after hospital discharge

Findings

Information about the individual characteristics of participants is shown in Table 2. According to this Table 1 the intervention, no significant differences were observed between individual characteristics of participants in the two groups. Also between the two groups in terms of risk factors, statistical analyzes have also shown that according to the diagnosed disease, there was no statistically significant difference between an individual or a family history of hospitalization and underlying disease.

Table 2: Participants' individual Characteristics

Variable	The levels of variable	Intervention	Control	P
		Count (Percent)	Count (Percent)	
Age		57/13	60/47	*0/22
Gender	Male	15	17	**0.25
	Female	17	15	
Marital status	Single	1	1	**0.94
	Married	23	25	
	divorced	1	1	
	Death of spouse	7	5	
Education	Under Diploma	18	17	.94 ***0
	Diploma	9	9	
	Academic	5	6	
Occupation	Worker	5	6	**0.99
	Employee	5	5	
	Self-employed	4	5	
	Housekeeper	10	10	
	Disabled	1	1	
	Retired	7	5	
	Poor	11	13	**0.87

The economic situation	Moderate	20	18	
	Good	1	1	
Diagnosis	Angina	20	21	**0.74
	STEMI	7	8	
	PCI	5	3	
Family history of heart disease	Has	20	18	
	Does not have	12	14	**0.61
Individual's history of hospitalization	Has	20	17	
	Does not have	12	15	**0.45
Family members' hospitalization history	Has	23	25	
	Does not have	9	7	**0.56
Underlying diseases	Diabetes	4	3	
	Hypertension	9	10	
	Hyperlipidemy	2	3	
	Diabetes + hypertension	3	3	
	Diabetes + Hyperlipidemy	5	4	
	Hypertension+ Hyperlipidemy	2	3	**0.99
	Diabetes+ hypertension+ Hyperlipidemy	1	1	
	None	6	5	
* Independent t-test, **Mann-Whitney test, ***Chi-square				

In comparing average scores of learning needs, depression and anxiety between the two groups, independent t-test results indicated no significant difference between the two groups before the intervention ($p > 0.05$). But in comparison between the two groups after the intervention, the results showed that the mean learning needs in the intervention group ($16/58 \pm 4/8$) was significantly lower than the control group ($34/25 \pm 1/6$) ($p < 0.001$). Also in comparison the mean scores of each group learning needs, before and after the intervention, paired t-test showed that the scores of the intervention group learning needs had significantly decreased ($p < 0.001$); so that the intervention group after the intervention compared with the condition before the intervention ($30/85 \pm 63/5$) had lower average score ($16/58 \pm 4/8$).

In comparison between the two groups after the intervention, the results showed that the mean score of depression in the intervention group ($4/25 \pm 2/32$) was significantly less than the control group ($12/19 \pm 2/49$) ($p < 0.001$). In comparing of depression average scores in both groups before and after the intervention, paired t-test showed that the depression score of intervention group had been significantly reduced ($p < 0.001$); so that the intervention group after the intervention compared with the condition before the intervention had lower average scores ($4/25 \pm 2/32$) ($10/78 \pm 3/73$).

Also in comparison between the two groups after the intervention, the results indicate that the mean anxiety score in the intervention group ($5/97 \pm 3/01$) was significantly less than the control group ($14/3 \pm 3/3$) ($p < 0.001$). Also in comparison the mean anxiety score in each group, before and after the intervention, paired t-test showed that the intervention group anxiety score had been significantly decreased ($p < 0.001$); So that the intervention group had lower average scores after the intervention ($5/97 \pm 3/01$) compared with the condition before the intervention ($13/06 \pm 4/9$) Table 3.

Table 3: comparison of learning needs, depression and anxiety in two groups before and after intervention

Variable	The levels of variable	Intervention	Control	P
		Mean \pm standard deviation	Mean \pm standard deviation	
Learning Needs	Intervention	30.85 \pm 6.35	16.58 \pm 4.8	0.001 <
	Control	32.68 \pm 1.75	34.25 \pm 1.6	0.07
	**P	0.12	<0.001	
Depression	Intervention	10.78 \pm 3.73	4.25 \pm 2.32	<0.001
	Control	12.13 \pm 2.54	12.19 \pm 2.49	0.66
	**P	0.10	<0.001	
Anxiety	Intervention	13.06 \pm 4.9	5.97 \pm 3.01	<0.001
	Control	14.25 \pm 3.4	14.3 \pm 3.3	0.88
	**P	0.26	<0.001	
* Paired t-test, **Independent t-test				

Discussion

The results of current study showed that need-based individual education program leads to a significant decrease in scores of the intervention group's learning needs. In this regard, Shomali and Aliasgharpour's study entitled "Effect of Education based on Educational Needs on Weight Changes in Patients Undergoing Haemodialysis" in Zanjan revealed that 68/8% of the subjects in the intervention group after two months of training need average education and 6.2 % need a lot of education and 25% need low education, but in the control group 67/8 of the participants need many training sessions and 22/6 percent need moderate education and 9.6 percent need less training sessions and test results showed significant differences between the two groups of intervention and control after training ($p < 0/001$). Also Tel and Tel's (2006) study results showed that after the test between the two groups based on the information needs scores there was a significant difference ($p < 0/001$).

Results of this study showed that depression in patients with coronary artery disease after intervention in the intervention group decreased significantly. In this regard, the results of Khushab's, et al. [16] study, entitled "The Impact of collaborative care model on depression and anxiety in patients with heart failure" in Kerman revealed that after the intervention, mean scores of depression were significantly different between the two groups ($p < 0/001$). Also in Hanifi's et al. [17] study the level of depression in the intervention group compared with the control group after the intervention showed statistically significant reduction ($p = 0/03$).

Also the results showed that after the intervention the patients' anxiety level in the intervention group decreased significantly. In confirming the present study findings Arefi's et al. (2012) study can be mentioned. Based on the results of their study after the intervention, there was no statistically significant difference between the mean levels of anxiety; this issue indicates that patients in the experimental group showed lower levels of anxiety ($p < 0/001$). The results of Khushab's et al [16] study entitled "The Impact of Collaborative Care Model on depression and anxiety in patients with heart failure," by reporting the ($001/0 > p$) are consistent with the above findings.

The Study of Aghakhani et al (2012) entitled "Effect of education on anxiety and depression in patients with myocardial infarction" shows that education, will reduce significant decrease in anxiety and depression in the intervention group at discharge and two months after discharge ($P < 0/05$).

Conclusion

Coronary artery disease is the leading cause of death in the average countries [5] that has received considerable attention because of its adverse consequences. Among cardiovascular disease symptoms, they are anxiety and depression that exacerbate and prolong the disease and interfere with the treatment and delayed recovery [6]. Studies suggest that depression, anxiety and life stress, are underlying factors of heart disease and other heart disease also leads to the same problems [7].

Evidence suggests that people who have survived a myocardial infarction will be at risk for anxiety and stress and depression is a common outcome and complication of myocardial infarction and other serious chronic diseases. Researches suggests that depression is not just a complication, even the premorbid to other problems; Depressed people eat less food, they are more likely to smoking, exercise less, they are less able to adapt your diet. The Symptoms of major depression is observed in about 65 percent of patients with myocardial infarction [18].

Education is of factors which are related to development and progress of a community and allow a person to live with greater prosperity in their natural and social environment. Complete and tailored education according to the learning needs of patients, reduce maintenance costs and increase healthcare quality. Effective training helps patients to live healthier and more independent and meanwhile patient education can improve health care and reduce the costs but educational need should be determined before education, if need is not determined, education will not have a good result [13].

Based on the findings of the present study, need-based education program has been effective on depression and anxiety in patients with coronary artery disease and it is a suitable method for increasing level of self-care and mental health in this disease. According to the increasing prevalence of coronary artery disease and the importance of long term follow up, educating patients about the different aspects of this disease seems necessary.

In the present study we tried to carry out the education process based on patients' needs, and the process of education in order to be effective, a variety of methods including lectures and question and answer were used. Despite the importance of this issue, for various reasons, such as lack of time and lack of trained personnel, actually the issue of education does not get attention or educations are quite stereotypical and are not based on the needs of each patient; in this study, by a formulated and low-cost program, while promoting cardiac patients information, we were able to take steps to reduce depression and anxiety in cardiac patients. Therefore, it is recommended that the nurses as key members of the healthcare team, who have the most contact with patients in the medical environments and have more complete understanding of the needs of the patients, use the findings of this study to follow-up and productive education for patients with coronary artery disease.

Acknowledgments

The researchers would like to express their gratitude to the personnel of the cardiology ward at shahid chamran hospital in Isfahan, Iran, and all of the patients who cooperated and participated in this study.

References:

1. Pashaii Sabet F. Family experiences of coronary artery bypass graft [dissertation]. Isfahan. Isfahan University of Medical Sciences. 2006.110P.
2. Vahedian AA, Elhani F, Ahmadi FE, Kazemnejad A. The effect of family-centered empowerment model on the life style of the myocardial infarction patients. IJCCN [Internet]. 2010. 2 (4), 127-132.
3. World Health Organization. Organization Mondiale de la Santé [Internet]. Department of Measurement and Health Information. 2015.
4. Bashiri Z, Aghajani M, Masoudi Alavi N. Effects of Psychoeducation on Mental Health in Patients With Coronary Heart Disease. Iran Red Crescent Med J [Internet]. 2016 May. 18(5):e25089.
5. Talaei M, Sarrafzadegan N, Sadeghi M, Oveisgharan Sh, Marshal T. Incidence of cardiovascular Disease in an Iranian Population, The Isfahan Cohort Study. Arch Iran Med [Internet]. 2013 16(3): 138-144.
6. Arab M, Ranjbar H, HosseinRezaee H, Khoshab H. Assessment of the depression and anxiety in patients with acute coronary artery disease. IJCCN [Internet]. 2012. 4(4): 197-202.
7. Mehrabi T, Sheikholeslami F, Ghazavi Z, Nasiri M. The effect of group therapy on depression and anxiety levels of the patients with myocardial infarction. IJNMR. 2010. Vol 9, No 3.
8. Arefi S, Zakerimoghdam M, Ghiyasvandian Sh, Haghani H. The effect of first phase cardiac rehabilitation programs on anxiety and depression in acute coronary syndrome patients. Cardiovascular Nursing Journal [Internet]. 2012; 1 (3) :32-38.
9. Tel H, Tel H. The effect of individualized education on the transfer anxiety of patients with myocardial infarction and their families. HEART & LUNG [Internet]. 2006. VOL. 35, NO. 2: 101-107.
10. Bench S, Day T. The user experience of critical care discharge: A meta-synthesis of qualitative research, International Journal of Nursing Studies [Internet]. 2010. 47. 487-499 P.
11. Soltani F. Family experiences of patients admitted in Intensive Care Unit (ICU) [dissertation]. ijnmr .Isfahan. Isfahan University of Medical Sciences. 2008. 150P.
12. Mousavi SS, Sabzevari S, Abbaszade A., Hosseinnakhaie F. THE effect of preparatory face to face education to reduce depression and anxiety in open heart surgery adult patient. Iran J Nurs Res. SUMMER 2011 , Volume 6 , Number 21; Page(s) 29 To 38.
13. Aliasgharpour M, Shomali M, Moghaddam MZ, Faghihzadeh S. Effect of a self-efficacy promotion training programme on the body weight changes in patients undergoing haemodialysis. J Ren Care [Internet]. 2012 Sep;38(3):155-61.
14. Smith J, Lilies C. Information needs before hospital discharge of myocardial infarction patients: a comparative, descriptive study. J Clin Nurs. 2007 Apr;16(4):662-71.
15. Galdeano LE1, Furuya RK, Rodrigues MA, Dantas RA, Rossi LA. Reliability of the Cardiac Patients Learning Needs Inventory (CPLNI) for use in Portugal .J Clin Nurs. 2014 Jun;23(11-12):1532-40.
16. Khushab H, Bagherian B, Abbaszade A, Mohammadi I, Kohan S, Samarerad H. The effect of collaborative care model on depression and anxiety in patients with heart failure. Evidence Based Care. Kerman. 2012. 2(2). 37-45.

17. Hanifi N, Bahraminejad N, Mirzaei Khalilabadi T, Ahmadi F, Khani M, Taran L. the effect of orientation program on stress, anxiety and depression of patients undergoing coronary angiography. *Iran J Nurs Res.* 2012. 7(25).1-8.
18. Aghakhani N, Khademvatan K, Habibzadeh H, Jasemi M, Eghtedar S, Rahbar N et al . the effect of education on anxiety and depression in patients with myocardial infarction in selected hospitals, IRAN. *J Urmia Univ Med Sci.* 2012; 23 (2) :105-114