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A STUDY OF THE IMPACT OF PEER EDUCATION GROUP ON QUALITY OF LIFE AND GENERAL SELF-EFFICACY OF PATIENTS WITH UNSTABLE ANGINA

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ABSTRACT

Introduction: Cardiovascular diseases including angina are one of the most important factors causing mortality in the world. The chronic nature of this disease can greatly affect the quality of life and self-efficacy of patients. The quality of life and self-efficacy of patients can be improved through education. Today, one of the new methods used in teaching patients is peer education.
Objective: The present study aimed to investigate the impact of peer education on the quality of life and self-efficacy of patients with angina pectoris.
Materials and Methods: The present research is a randomized, controlled clinical trial study (pre-test and post-test). 60 patients with angina pectoris hospitalized were randomly assigned to control and test groups, and the test group received the training required for a patient with angina pectoris through peer education, and the control group received routine training by a nurse received. The data on patients were collected before and after the intervention and one month later using the Seattle Angina questionnaire and a general self-efficacy questionnaire. Data were analyzed using t-test and paired t-test. The statistical t-test and paired t-test were performed using SPSS V.16 software.
Results: After data analysis, it was found that there was no significant difference between the test and control groups in the scores of quality of life and self-efficacy ($p>0.05$). Also, immediately after intervention, no significant difference was observed between the test and control groups in two mentioned variables ($p> 0.05$), but one month after intervention, the quality of life and self-efficacy of test group significantly increased compared to the control group ($p = 0.0001$).
Conclusion: Using peer education in patients with angina pectoris can have positive effects on their quality of life and self-efficacy. Therefore, this method can be used to improve the quality of life of these patients.

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Introduction

Today, cardiovascular diseases are considered as the main cause of mortality and disability in the world (1). In Iran, the first cause of death is cardiovascular disease and it has been reported that more than 39.3% of deaths in Iran are due to ischemic heart disease. The mortality rate for cardiovascular disease is 171.4 per 100,000 persons (2,3). Among these diseases, angina pectoris accounts for a large percentage of ischemic heart diseases. The characteristic of this disease is a feeling of compression and chest pain due to an imbalance in blood supply and oxygen demand following coronary artery stenosis due

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to atherosclerotic lesions (4). Due to the chronic and disabling nature of heart diseases, it affects the health-related quality of life in addition to clinical and economic burden and this reveals the importance of examining the quality of life in these patients (5). Impairment in quality of life not only has a negative effect on the social, family, working life and recreational activities of patients, but also increases the risk of hospitalization and death due to this disease (6).

In fact, the quality of life is a concept related to the field of nursing and nurses have always tried to improve it. They have tried to improve the quality of life of patients by providing health services and participating in nursing research (7). Since the disease affects the total dimensions of the patient's life, i.e. physical, psychological and social conditions, nurses should make more detailed plans by obtaining comprehensive information on patients' quality of life (8).

Additionally, self-efficacy, as an important prerequisite for self-management is a valuable tool for nurses in health care centers. If nurses evaluate the patients’ self-efficacy and try to enhance it, the patients’ motivation to take care of themselves will be increased (9,10). Self-efficacy has been effective in moderating the health behaviors of patients with cardiovascular disease and decreased the severe implications of coronary artery disease and subsequently, reduced hospitalization and even postponed coronary artery bypass graft surgery (11,12). Self-efficacy leads to better results of self-management, increases life expectancy and moderates health behaviors (10).

Using educational approach to raise the awareness of patients with heart diseases is one of the effective steps to improve their quality of life and increase self-efficacy in them (13-15). Training is necessary to increase the awareness, knowledge and satisfaction of patients and its effect on reducing and resolving patients’ problems and issues and the nursing staff must work hard to reduce and resolve these problems by providing information and awareness to patients about their disease, their therapeutic procedures and interactions and other questions and problems that they are having during their illness.

Peer education is one of the most effective ways of patient training that is effective in facilitating and developing health and creating a suitable environment for learning (16). Peer education group is a kind of educational strategy that is defined as the development of knowledge and skills through active aid and support among people of the same level and is one of the most important and effective methods for educating learners (17). This educational technique originates from Bandura's social learning theory. According to this theory individuals learn from each other through observation, imitation and modeling (18). Peer education is done to make change through trying to correct knowledge, attitudes, beliefs and behaviors (19). Studies show that peer support in patients with other heart diseases leads to observance of diet, improved self-efficacy, reduced anxiety, doing exercise, reduced smoking, and reduced stress, as well as increased rehabilitation motivation (3, 20,21). Due to the impact of peer education on improving the patients’ health status, the present study aimed to determine the effect of peer education on quality of life and general self-efficacy of patients with unstable angina pectoris.

Method

The present study was a randomized controlled clinical trial conducted on patients with unstable angina pectoris who were admitted to Vali-e asr Hospital affiliated to the Fasa University of Medical Sciences. The study was conducted in a period from 26th March 2015 to 3th September 2016. The sample size was estimated by taking into account the significance level of $p > 0.05$, test power of 80% and $D = 1.04$, $S = 1.16$, $\alpha = 0.05$ and $\beta = 0.2$. In order to find the average difference between the two groups, the sample size was estimated 20 persons for each group but in order to prevent the drop-out, sample size was increased and 30 individuals were considered as samples in each group ($N = 2s^2 / D^2 (Z1\text{-}\alpha / 2 + Z1\text{-}\beta)\ 2$) were assigned to two groups using random assignment software.

The inclusion criteria were 35 to 65 age group, history of unstable angina pectoris, lack of cognitive problems and physical disabilities, and ability to speak in Persian and exclusion criteria were an incident that leads to the patient’s increased anxiety, the occurrence of physical problems in the patient, followed by the patient's inability to care for himself, dissatisfaction with continued participation in the research and death of the patient.

Peer criteria for participation in the study were the willingness of the voluntary participation in the study, having at least the minimum level of reading and writing education, spending of at least two years after hospitalization due to heart disease, the willingness to receive training and providing training to others, and having appropriate social relationships. The data were collected using demographic characteristics questionnaire, Seattle Angina questionnaire (SAQ), and general self-efficacy (GSE-17) questionnaire. Seattle Angina Questionnaire has 19 items and deals with coronary artery disease in five dimensions. 9 questions measure physical performance following symptoms of angina pectoris. One question measures angina pectoral pain stability and includes changes in the chest pain for the most severe activity of patients. 2 questions measure repeat of the pain and drug use following chest pain. 4 questions measure the patient’s satisfaction with the treatment, including the satisfaction with the recent treatment and drug use, the physician's description and overall satisfaction. 3 item measures the perception of the disease. Quality of life is calculated by sum of scores of questions and converting them to a scale of 0 to 100, in which 0 is the worst and 100 is the best. The validity and reliability of the Persian version of it has been confirmed (22).

The self-efficacy questionnaire (GSE-17) also includes 17 items on self-efficacy. In order to estimate the reliability coefficient, Cronbach's alpha was used and estimated equal to 0.86 and 0.71 doe the subscales of general self-efficacy and social self-efficacy, respectively. The questionnaire is based on the 5-point Likert scale. If the score obtained in the range of

17 to 34, the individual's self-efficacy is poor. The scores obtained in the ranges of 34 to 51 and higher than 51 represent moderate and high self-efficacy, respectively (23).

In order to intervene in the beginning of the study, a list of patients admitted to the hospital during two years ago was prepared. Individuals who were eligible according to the inclusion criteria were studied as peers. Finally, two peers (a man and a woman) who were able to collaborate with the researcher until the final stages of the study were selected. The training items were determined according to the research objectives and presented by the researcher during three training sessions. The contents of the first session included the concepts, the importance and advantages of peer education, communication skills, active listening ability, and the ability to receive and send messages as well as reduction in anxiety. In the second session, the items on smoking, physical activity, pain control, fatigue, weight, normal and social levels were taught, and in the third session, other needs of the patient such as following of medication and nutrition were taught. At the end of each session, the subjects taught were discussed. The teaching method of a researcher was a lecture and a question-and-answer. After each training session, peers trained educational materials through a role-playing method in the presence of the researcher. At the end of the training, in order to ensure the readiness of the peers and the uniformity of education, the researcher evaluated peers by a checklist.

After explaining the research objectives to the participants and they were ensured that they can withdraw from participation in the study whenever they want so that their treatment wouldn't be disturbed. Also, they were assured that their information would remain confidential. The formal consent was given from all the participants. Then two peers, one woman and one man, went to the hospital at certain times and presented in a conference hall and exchanged information with a group of patients with angina pectoris and responded to their questions on the issues related to their disease. The discussion was conducted in group manner and controlled by the researcher. Patients were trained during three 30-45 minutes sessions by peers. The control group received routine training by nurses. The quality of life and self-efficacy of the patients of both control and test grouped were assessed before and one month after the training program using a quality of life assessment questionnaire and self-efficacy questionnaire by the researcher. For data analysis, SPSS v.16, descriptive and inferential statistics of t-test and chi-square were used. P less than 0.05 was considered significant.

Results

The results showed that the average age of the participants in the experimental and control groups were 56.07 ± 5.66 and 55.17 ± 5.70, respectively. The results of data analysis showed that there was no significant difference between the two control and experimental groups in the measured demographic and clinical indices such as age, gender, marital status, education, history of chronic disease and history of heart disease (P-value> 0.05) (Table 1).

Table1. Demographic and clinical characteristics and comparison of them between the control and experimental group

Variable	Group		
	Experimental (n=30)	Control (n=30)	Sig. (p-value)
Age	56.07±5.66	55.17±5.70	0.542[2]
Gender			
Male	14(46.7)	16(53.3)	0.606[3]
Female	16(53.3)	14(46.7)	
Marital status			
Married	24	25	0.58[3]
Widow	5	6	
Education			
Illiterate	7(23.3)	6(20)	0.898[3]
Elementary	10(33.3)	10(33.3)	
Secondary	7(23.3)	5(16.7)	
Diploma	5(16.7)	7(23.3)	
Associate's degree and higher	1(3.3)	2(16.7)	
Chronic disease			
Yes	17 (56.7)	16(53.3)	0.795[3]
No	13(43.3)	14(46.7)	
History of heart disease	15.00±9.36	14.77±9.78	0.925[2]

[1] Data were reported as frequency (%) and/or mean and standard deviation, [2] t-test, [3] chi square test

In Table 2, the quality of life and self-efficacy of patients in both groups before and after intervention by peers and one month later were compared. The results showed that before group discussion and peer education provided to participants, there was no significant difference between the two groups in quality of life (P-value = 0.461). Also, after intervention, the difference between the two groups in quality of life was not significant (p-value = 0.20), while one month after the intervention, significant difference was observed between the two groups in the quality of life (P value = 0.000.

Table 2. Comparison of mean scores of quality of life and self-efficacy between the two groups

Variable	Group		Sig. (p-value)
	Experimental	Control	
Quality of life			
Before intervention	27.53±4.01	26.67±4.97	0.461
After intervention	31.07±3.93	28.43±4.59	0.020
One month after intervention	44.53±6.69	26.10±4.38	0.000
Self-efficacy			
Before intervention	26.73±4.74	27.63±5.35	0.493
After intervention	31.10±4.74	29.67±4.89	0.254
One month after intervention	40.13±5.87	26.73±4.85	0.000

[1] Data were reported as mean and standard deviation, [2] Paired t-test

Additionally, participants' self-efficacy was assessed using a general self-efficacy questionnaire. Like the results obtained from the comparison of the two groups in terms of the quality of life, before intervention, the mean scores of self-efficacy showed no significant difference between the two groups (P-Value =0.493). Also, immediately after group discussion and education by peers, no significant difference was observed between the two groups in self-efficacy (P-value= 0.254). But one month after intervention, participants of the experimental group reported an increase in self-efficacy, resulting in significant differences between the two groups (P-value = 0.000).

Discussion

The present study aimed to investigate the effect of peer education on quality of life and general self-efficacy in patients with unstable angina pectoris. Before the intervention, the quality of life of patients in the experimental and control group was low. But, after intervention, especially on month after it, it was reported that this level was significantly higher in the experimental group than the control group.

Martensson, Dracup ,Canary & Fridlund (2003) have stated that the symptoms of angina pectoris can lead to undesirable quality of life in patients (24). Kharameh et al., in their study on quality of life in patients with angina pectoris, have concluded that the quality of life in these patients is not at desirable level (4). In addition, Borzou et al. have compared the effects of the two individual and peer education on quality of life in patients with heart failure, and showed that before the intervention, patients had a low quality of life, but after the intervention, as well as one month later, the results of the comparison of the mean quality of life indicated a significant improvement of this component in the patients receiving the training by their peers (25). The results of this study are consistent with the results of the present study. While, the results of a study titled “the effect of individual counseling on the quality of life of patients with myocardial infarction” by Tofighian, showed that after educational counseling, no significant difference was observed between the control and experimental group in the average scores of quality of life. This result is not consistent with the results of the present study. This may be due to multiple anxiety in patients with myocardial infarction, which can reduce the impact of individual educational intervention on their quality of life (26). On the other hand, Varei et al. have performed a study to determine the effect of peer education on the anxiety of patients undergoing coronary artery bypass graft surgery, and finally suggested this method as an appropriate strategy to reduce the anxiety of cardiac patients, especially the candidate for cardiac surgery (3).

According to the results, before intervention, no significant difference was observed between the two groups in self-efficacy. Also, immediately after group discussion and education by peers, no significant difference was observed, but one month after intervention, participants of experimental group reported a significant increase in self-efficacy, resulting in significant difference between the two groups. Improvement of self-efficacy leads to better self-management results, increases life expectancy and moderates health behaviors (10, 27). The results of assessment of self-efficacy of participants before intervention indicated homogeneity and no difference between the two groups. Immediately after training by peers, no significant difference was also observed between the two control and experimental groups. But the results of assessment of self-efficacy one month after the intervention showed improvement in self-efficacy in the experimental group. Sanaei et al., in their research, concluded the results consistent with the results of the present study and pointed out that empowerment programs in relation to surgical patients, such as accompanying patient and family, explanation of the disease process,

emotional support of patients and their families can provide a suitable ground for improving self-efficacy in them (28). In the present study, one of the limitations that can be mentioned is that this study was conducted only on two groups of patients with unstable angina pectoris, therefore, the generalization of its results for all patients with unstable angina pectoris may face limitations. Due to the pre-test and post-test nature of the present study, various sources and references and individual studies (confounding factors) could affect the outcome of the post-test.

Conclusion

The results of the present study show the positive effect of peer education on improving quality of life and self-efficacy in patients with unstable angina pectoris, especially as a chronic disease. In fact, providing collective training to patients and their direct participation, can provide the conditions to improve the health of these patients, to restore cardiac rehab and ultimately to increase their survival and longevity. Additionally, given the multidimensional effects of chronic diseases on family members and the potential role that this center plays in patient's self-efficacy and quality of life, it seems that family member empowerment programs could also be helpful in improving the condition of these patients. Therefore, it is suggested to conduct further studies and take more actions in the field of useful strategies in order to provide empowerment programs for families of patients with heart disease. Also, it is suggested to perform further studies on the effect of peer education on stress, anxiety and depression in patients with unstable angina.

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