



## Investigating the Effect of Peer Education on Self-Efficacy in Patients with Heart Failure in Selected Hospitals of Saveh County

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### ABSTRACT

The present study is a quasi-experimental study in which the effect of peer education on self-efficacy in patients with heart failure was investigated in 2016. The research environment of this study included Shahid Chamran and Shahid Modarres hospitals of Saveh county which were affiliated with the Arak University of Medical Sciences. In order to determine the sample size, according to the number of heart failure patients referring to these hospitals and according to the consultant professor's view, the Cochran sample size determining formula was used for the limited community. Sixty Subjects from selected hospitals of Saveh county by the availability sampling method were selected for this study; these participants were patients with heart failure who had met inclusion criteria. The research data had been collected through two questionnaires: demographic data and self-efficacy. After preparing the peer group, during one month, four education sessions were conducted by peers for peer groups. After collecting the data, according to the research objectives, data were entered into SPSS software version 21 and were analyzed. In order to achieve specific objectives and answer research questions, descriptive statistics including tables and central tendency indexes such as average and indices of dispersion such as standard deviation and inferential statistics such as independent t-tests and chi-square were used. Results indicated that the highest percentage of the studied subjects before the intervention (53/8%) had low self-efficacy and the lowest percentage of them (6/6%) had high self-efficacy. The mean and standard deviation of self-efficacy in studied subjects before the intervention were 23/4 and 0/58, respectively. In investigating the subjects after the intervention, it was found that most of them (56/7%) had high self-efficacy and lowest percentage of them (10%) had low self-efficacy. The mean score and standard deviation of self-efficacy in subjects after intervention were respectively 48/8 and 2/26. Research findings also showed that an before education average of 23/6 changed to after education average of 48/8 and paired t-test indicates that education had an impact on self-efficacy in patients. Result is that peer education would improve the self-efficiency of patients with heart failure.

**Keywords:** Peer education, Patients with heart failure, Self-efficacy, Saveh.

### INTRODUCTION

Nowadays cardiovascular disease is known as one the main factors of threatening the humans' health and in many countries; including our country it is recognized as the most important cause of death. Obtained opportunities in promoting the health system and controlling communicable diseases, urbanization, living in the industrialized world, along with changes in the age structure of the population in line with aging have caused the population to face with the increased risk of non-communicable diseases, in such a way that among all non-communicable diseases; cardiovascular diseases, cancers, diabetes and chronic lung disease are the more serious threats to the health of all regions of the world and need the allocation of public and private abundant financial resources around the world

(Khajavi et al., 2014). As one of type heart disease, cardiac failure despite the medical advances is still a major problem of the healthcare system and it is considered as a chronic, progressive and debilitating illness. Chronic heart failure is a set of clinical symptoms that due to the heart dysfunction, the ventricles are unable to pump blood to meet the body's metabolic needs. This disorder is of the most common cardiovascular disorders and it is among the progressive and debilitating disorders (Hossein Zadeh, 2013).

One of the important and affecting factors that have been discussed in nursing studies is self-efficacy. Self-efficacy is one of the main constructs of Social-cognitive Theory and it means "a person's confidence of his ability to perform a particular behavior" (Shafii et al., 2014). In investigating the patients with heart disease, self-efficacy is considered as a predictor of cardiac management improvement and social, psychological and physical functioning (Dougherty et al., 2011). Moreover, there is considerable evidence to suggest that self-efficacy plays an important role in the adherence accepting and taking action in heart disease patients (Rajati et al., 2012). Self-efficacy is one of the important, widely used and effective concepts of Socio-cognitive Theory, which was first introduced by Albert Bandura. In this theory, cognitive processes have a crucial role in human's behavior. Defective cognitive processes leads to individual's false expectations of their effectiveness and these expectations and perceptions can lead to anxiety and avoiding challenging opportunities (Ashoori, 2014). Self-efficacy, involves individual's trust and confidence of his ability of doing self care process optimally, so in this way a person achieves better results from self care (Rajati et al., 2014).

Education in patients with heart failure is one of the main components of self-care and includes information from signs and symptoms of disease, lifestyle changes and adherence to treatment. Patients with heart failure need education and support in connection with a medication regimen, drug consumption, diet, exercise and taking appropriate actions while the symptoms appear (Shojaie et al., 2013). By reports of patients' increased knowledge and awareness of care-givers of heart failure and health consequences by others, patient education program often can be effective in improving patient behavior and on the other hand improper education leads to lack of healing and improper control of disease and physical mental disability (Vedel et al. 2015). Due to the shortage of nurses in country hospital wards, that seems they have no enough time to communicate with patients and educate them, educating peers can be useful in solving this problem, on the other hand, the peer group is able to communicate better with their peers and encourage them to adopt healthy behaviors. In this way one of the groups that can effectively train these patients, will be patients themselves with heart failure. Considering the importance of education, this study aimed to investigate the effect of peer education on self efficacy of patients suffering from heart failure in Saveh county hospitals in 2016. It is hoped that this study plays the role of a pathfinder with regard to the future studies in line with identifying and solving problems in patients with heart failure.

## **1. Theoretical Foundations and Research Hypothesis Design**

### **1.1. Heart Failure**

Heart failure is of the most common cardiovascular disorders worldwide, the incidence and prevalence of heart failure has a direct relationship with aging (Aboutalebi et al., 2012). Heart failure is a condition in which the heart is not able to pump enough blood to body tissues or only with an increased filling abnormal pressure is able to do so. In other words heart failure means a sharp decline in heart function, the contraction or expansion force of heart will be reduced and it cannot pump enough blood, congestive heart failure (CHF) occurs when the weakness in heart pumps led to some specific symptoms of this disease (Abbasi Abianeh et al., 2014). Heart failure is the relative inability of the heart to pump blood through the circulatory system. Thus, this disease leads to the lack of blood in organs, which results in weakness and fatigue and also the accumulation of blood in the venous system, causes swelling in the limbs especially the feet (Heidar Zadeh et al., 2013; Baghaiee et al., 2015).

### **2.2. Self-Efficacy**

Self-efficacy is derived from, renowned psychologist, Albert Bandura's of Social cognition Theory (1997) that it refers to a person's beliefs or judgments of his or her abilities to perform the duties and responsibilities. Social cognitive theory is based on the trilateral model of environment, behavior and individual. Bandura refers to self-efficacy as a central concept that is the perceived ability to perform the desired action. In this view, behavior is influenced by social forces but the dealing and way of effecting on social forces is in the individual's control. Therefore, as much as the environment forms human, human chooses situations, affects on others and he is affected by others (Khoshnevisan et al., 2011; Huffman et al., 2013).

Self-efficacy is a valuable tool for nurses in health centers and assessment of patients' self efficacy by nurses and its promotion can increase patient motivation to be involved in self care. It seems promoting self care behaviors in cardiac patients could lead to improved quality of life and decrease their times of hospitalization. Thus, it can be expected that symptoms can be prevented or delayed (DeWolf et al., 2012). The people, who have higher levels of self-efficacy, participate more actively in self care (Rustad et al., 2013). Patients with heart failure as a result of immobility and fear of falling do not participate in physical activities and this leads to a decrease in cardiovascular function; thus patients' physical function in a vicious cycle will be reduced gradually. Perceived self-efficacy in these patients, indirectly through motivation and on the other hand by affecting expectations of the physical activity outcome, can be useful in starting and sustaining the physical activity behavior in these patients. Medical care providers in the process of sports and physical activity formation by self-efficacy increasing strategies should facilitate behavior change in patients (Rajati et al., 2012).

### **2.3. Peer Education**

Humans for self care, getting well and staying well, need education and patient education is among the basic operations of health and treatment professions. Education as a way of conveying concepts, new achievements and results of scientific endeavors, has been able to step forward in the acquisition and promotion of students in the scientific community (Khoshraftar Rudy et al., 2015). Peer education is a process in which motivated and well-trained people undertake the responsibility of organized or spoken education to their peers. The process has been targeted to develop the knowledge, attitudes, beliefs and skills of people and their empowerment to take responsibility for protecting their health (Rabbat et al., 2012). Peer education approach is of behavior change strategies. Peer is a person who belongs to the same social group that this social group can be the same in terms of age, sex, occupation, socioeconomic status or health status and other factors (Castner et al., 2014). In peer education, peer and patient because of membership in a group, empathy and social identity will get higher and will lead to knowledge promotion. Peer-based interventions in patients with cardiac events lead to promotion in self-efficacy, diet, reduced anxiety, reduced smoking, stress adjustment and increased incentives for cardiac rehabilitation. Recently, this approach has been used in diverse diseases, such as arthritis, heart disease, AIDS, breast cancer, burns, diabetes, and many diseases (Borzou et al., 2014). Considering the foregoing principles, hypothesis of this study can be raised as follows:

H: Peer education has impact on the self-efficacy of cardiac patients.

## **MATERIALS AND METHODS**

### ***Type of method***

The present study is a quasi-experimental study in which the effect of peer education on self efficacy in patients with heart failure was evaluated.

### ***Population and sample***

The research environment of this study included Shahid Chamran and Shahid Modarres hospitals of Saveh county which were affiliated with the Arak University of Medical Sciences. In order to determine the sample size according to the number of heart failure patients referring to hospitals and according to the consultant professor's view, determining sample volume formula was used. Cochran's formula for determining the minimum required sample was used for the limited community. Subjects by availability sampling method were selected from heart failure patients who met inclusion criteria for the study of hospitals in Saveh county.

### ***Data collection***

The research data have been collected through two questionnaires: demographic data and self-efficacy. Demographic information questionnaire includes age, sex, marital status, education level, and occupation, duration of disease, an underlying medical condition and record of education and cardiac self-efficacy questionnaire which was designed by Sullivan and colleagues in 1988. This questionnaire consisted of 16 questions and answers in this questionnaire have been scored based on the Likert scale ranging from zero (I am not totally certain) to four (I am totally certain). In this questionnaire 33-64 scores reflect high self-efficacy, 23-32 scores average present self-efficacy, 0-22 scores represent the low self-efficacy. Data in two stages before and one month after intervention were collected. The content validity index of self-efficacy questionnaire in terms of relevance, clarity and fluency of sentences was evaluated by 10 faculty members of Tehran University of Medical Sciences in the Shamsizadeh's (2012) study that respectively for relevance of 93/4, for clarity 98/8 and for simplicity and fluency 90/8 percents

were obtained and the total content of the questionnaire was calculated as 91/3. To examine the reliability of self-efficacy questionnaire (Shamsizadeh, 2012) used the method of internal consistency and its reliability by Cronbach's alpha coefficient measured as 0/97.

**Data analysis**

After collecting the data, according to the research objectives, data entered SPSS version 21 and they were analyzed by this software. In order to achieve specific objectives and answer the research questions, descriptive statistics such as tables and the central indices such as mean and dispersion indices such as standard deviation and inferential statistics such as t-test, chi-square were used.

**4. Research Findings**

Table 1 indicates that the highest percentage of the participants (53/3%) had low self-efficacy and the lowest percentage (6/7%) had high self-efficacy. Mean and standard deviation scores of self-efficacy in subjects before the intervention were 23/4 and 0/58, respectively.

**Table 1: Determining the self-efficacy score of subjects in selected hospitals of Saveh county before the intervention**

Score	Frequency	Percent
High	4	6.7
Moderate	24	40
Low	32	53.3
Total	60	100
Average	23.4	
Standard Deviation (SD)	0.58	

Table 2 shows that the largest percentage of the participants (56/7%) had high efficacy and lowest percentage (10%) had low self-efficacy. Mean and standard deviation scores of self-efficacy in subjects after intervention were 48/8 and 2/2, respectively.

**Table 2: Determining the self-efficacy score of subjects in selected hospitals of Saveh county after the intervention**

Score	Frequency	Percent
High	34	56.7
Moderate	20	33.3
Low	6	10
Total	60	100
Average	48.8	
Standard Deviation (SD)	2.2	

As it can be seen from Table 3, mean (23/4) and standard deviation (0/58) before education changed to 48/8 and 2.2 after education. To compare the self-efficacy before and after education a paired t-test was used and according to calculated P Value (P< 0001) that it is less than 0/05, it suggests that education has an effect on patients' self-efficacy.

**Table 3: Comparing the mean and standard deviation of self-efficacy in patients before and after peer education among the subjects in selected hospitals of Saveh county**

Self-Efficacy	Before Education	After Education
Average	23.4	48.8
SD	0.58	2.2
Paired t-test result	=5/02t	P<0001

**DISCUSSION**

The aim of this study was to evaluate the effect of peer education on self-efficacy in patients with heart failure in Saveh county" selected hospitals" in 2016, which was conducted in 2016. The findings of this study have been discussed with regard to the overall and specific objectives. Results showed that the highest percentage of samples before the intervention (53/8%) had low self-efficacy and the lowest percentage of them (6/6%) had high self-efficacy. The mean and standard deviation of self-efficacy in subjects before the intervention were the 23/ 4 and 0/58, respectively. Results of Rajati's et al. (1391) study indicate that the main affecting factor for patients with heart failure for doing exercise and regular physical activity is their self-efficacy. In addition to self- efficacy

predicting effect, this construct also plays an important role in patients' compliance with regard to physical activity. In the study of patients after the intervention, it was found that most of them (56/7%) had high self-efficacy and lowest percentage (10%) had low self-efficacy. Mean and standard deviation scores of self-efficacy in subjects after intervention were 48/8 and 2/26, respectively. Research findings also showed that mean(23/6) before education changed to 48/8 after education and paired t-test showed that education had an impact on self-efficacy of patients. The results Veraee's et al. (2013) study titled "the impact of peer education on anxiety in patients undergoing coronary artery bypass graft surgery": as clinical trial conducted by Spielberger anxiety inventory showed that peer education for patients undergoing coronary artery bypass graft surgery, is an effective method for reducing anxiety in them, therefore; for patient education it is recommended this pedagogical approach be used in heart surgery wards. Rashidi's et al. (2015) study under the title of "effect of peer support on efficacy in patients with type II diabetes" by using self-efficacy questionnaire conducted in diabetes management, indicated a statistically significant difference in self-efficacy in the experimental group after intervention and suggested that to complete the formal health workers performance we can use peer support within the community, as a supporting –educating and effective and affordable way, in order to improve the level of self-efficacy and self-management of the patients.

### **Conclusions, Suggestion and Applications**

The results of the analysis of the findings revealed that with regard to the second hypothesis "Peer education has an impact on self-efficacy of patients with heart failure", results indicate that peer education has a positive effect on self-efficacy in these patients and has enhanced and improved self-efficacy in these patients has; therefore, second research hypothesis is accepted. Since in the heart disease related studies measuring or evaluating the self-efficacy have not been considered that much, it is suggested that self-respect be considered more than before.

### **Application in Nursing Services Management**

Nursing managers' awareness of the importance and impact of peer education to promote self-efficacy may be grounds to start peer education for patients. Due to the shortage of nurses in hospital it is proposed that a unit be launched in hospitals and patients discharged on a voluntary basis invited to cooperate and to teach patients with heart failure.

### **Application in Nursing Education**

This study can be used to identify new issues in clinical practice and the results can be used to recognize problems in heart failure patients effectively.

### **Application in Nursing Research**

This study can provide a basis for further research with a focus on peer education for education centers to transfer the results and handling its dimensions, this type of patterns and trainings to students and nurses can be the initial condition for the foundation of these concepts, and then operationalizing these cares in cardiac patients.

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