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Effect of an Educational Self-Care Program on Knowledge and Performance in Patients with Coronary syndrome

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ABSTRACT

Aims The most important causes for mortality rate and poor quality of life in cardiovascular patients arise from insufficient and inappropriate self-care. This study aimed to examine the effect of an educational self-care program on awareness and performance in patients with Coronary syndrome.

Materials & Methods This is an experimental study conducted in hospitals affiliated with Qom University of medical science. 70 Patients were randomly assigned to experiment (n=35) and control (n=35) groups. Awareness and performance data were collected through interviewed questionnaire and observation. Then the patients in experiment group received 2 educational sessions each lasting 20 minutes during the hospital stay, and also were given an educational booklet review, while control patients received routine care. Data on all patients' awareness and performance was again collected one month later. The awareness and performance of two groups were compared using Wilcoxon and Mann-Whitney U tests.

Findings The difference between two groups in awareness area was -5.39 (p<0.001) and in performance area was -19.49 after intervention (p<0.001). The mean of changes of total awareness score of self-care was 0.57±1.14 in control group (p<0.004) and 8.40±9.39 in experimental group (p<0.001). The mean of self-care performance scores has been increased about 32.13±6.32 in experiment group (p<0.001) and the improving self-care performance of control group was 0.98±1.11 (p<0.001;).

Conclusion The application of an educational self-care program raises the awareness and improves the performance of the patients with coronary syndrome.

Keywords Patient Education; Self-Care; Coronary Syndrome; Coronary Disease; Heart Diseases

CITATION LINKS

[1] Study of the self-care agency in patients with heart... [2] Anthropometric indices in acute myocardial infarction patients and their relationship with some coronary heart disease risk ... [3] Effectiveness of education based on orem's self-care model in self-care activity of patients with implantable cardioverter ... [4] Evolution of Knowledge of the principles of self-care in acute coronary syndrome patients admitted to AliebnaabalebRafsanjan University Hospital During ... [5] Self-care behaviors in patients after myocardial ... [6] Self-care ability based on Orem's theory in coronary artery disease ... [7] 2013 ACCF/AHA guideline for the management of heart failure: Executive ... [8] Needs assessment of self-care training in patients with coronary artery disease in Bandar ... [9] The effect of patient education about self-care behaviors with media clips on self-care among patients with permanent ... [10] Perception of patients with cardiovascular disease about barriers and benefits of health promotion ... [11] Adherence to self-care and social ... [12] Self-care behaviour of patients with heart ... [13] Educational needs for improving self-care in heart failure patients with ... [14] Self-care behaviors in indigent patients with heart ... [15] Educational needs of myocardial infarction ... [16] Learning style and learning needs of heart failure ... [17] Investigating learning needs and life quality of patients with chronic myocardia heart attack referring to ... [18] Quality of life and its influencing factors in patients with congestive heart ... [19] Improvement of young and old patient's knowledge of heart failure after an educational ... [20] Rationale and design of a randomised controlled trial evaluating the effectiveness of an exercise program to improve the quality of life of patients with heart failure in primary care: The EFICAR study ... [21] The effect of an educational self-care program on knowledge and performance in patients with heart ... [22] The Effect of educating self-care behaviors to patients with heart failure in hospitals of ... [23] Effects of multidisciplinary Internetbased program on management of heart ... [24] The effect of face-to-face education on ... [25] The effect of cardiac rehabilitation on ... [26] Cardiac rehabilitation effects on quality of life in patients after acute myocardial...

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Introduction

Killing more than 12 million people, cardiovascular diseases is considered as one of the most common chronic diseases [1] and mortality reason in the world [2]. It is estimated that due to cardiovascular diseases, 20% of healthy life years of people will be lost by 2020 [3]. 1.5% of deaths in Europe and 1.2% in the United States caused by these diseases [4]. In Iran, cardiovascular disease, especially coronary disease is the most common reason of mortality, in all ages and two sexes. It has been reported that from 700 to 800 daily deaths in people with more than 35 years old, 317 cases are due to cardiovascular diseases [5, 6]. These diseases have several physical, mental and social outcomes.

In his study, Yancy *et al.* has shown 73.3% of patients felt limitation and isolation, 62% gave up hope and accepted that they did not look after themselves, 66.6 % of them had frequently been hospitalized and they believed it happen due to lack of knowledge about looking after themselves [7]. Nowadays, developing the technology has decreased the duration of diagnosis, cure and hospitalization days and patients don't have enough time to obtain information about their disease during hospitalization [8]. According to a study, 20% of hospitalized patients said that they have received enough information and consultation about their health conditions, while 20% of them were not satisfied about their received information and 60% have said information must be presented better [9]. Presenting educational programs, changing life style and methods of offering educational program to patients are issues improving the life style of patients [10, 11]. Learning self-care can direct person toward maintaining the health and cause to increase of adaptation and ability of self-care. In a study has been carried out by Jaarsma *et al.* [12], only 26% of samples done self-care very well. So, they have stated a condition in which these patients can look for themselves must be provided to increase in one year survival, decrease treatment costs and prolong further hospitalization [13]. Connell believes learning self-care considerably leads to increase the satisfaction, the continuation of care, independency in doing daily works, to decrease in tension and inability of patients [14].

In nursing, learning is dynamic issue and identifying the educational needs is considered as the first priority to plan [15]. Teaching must be done based on investigation and identification of educational needs of patients [4]. In fact, the educational needs should be identified through the patients' points of view, instead of treatment employees [8]. Patients are interested in knowing applied information about their condition, while nurses tend to medical aspects and care, medicines and physiology [16]. Studies have shown that educational needs are different. In a study has been done by Nasiri *et al.*, patients needed to learn about disease, medical diet, food diet and activity [17]. Rahnavard *et al.*, in his study reports, the most educational needs of heart congestion failure patients. This report includes medical diet (95%), food diet (92.5%), rest and sexual activity (85.5%), knowing the disease (85%), and treatment following (85%) [18]. Rostami *et al.*, have shown a significant relation between educational need and age; in people less than 50 years old, the most educational needs include driving, work and sexual issues, while these issues are unimportant for over 80 years old people [15]. Roncalli *et al.*, study on 115 patients with heart failure shows 2 weeks after learning, the score average of patients' knowledge is more than before learning, and remain at high level until 2 months. This high awareness, the researchers argue, led to improve self-treatment behaviors in participated patients [19]. Zuazagoitia *et al.* [20] and Mangolian Shahrabaki *et al.* [21] have shown the average of patients' knowledge with heart failure after intervention has been significantly increased than before. The study carried out by Tomita *et al.* show the experimental group have better score than control group in observing medical diet after performing educational program for patients with heart failure [22]. In other study investigating the effect of learning on self-care behaviors in patients with heart failure in Zahedan (Iran), self-care behaviors of experimental group significantly increased after intervention [23]. Ataei *et al.*, argue, despite of different advantages of teaching the patient toward worthless cost, this important issue does not have desirable condition in clinics, so that, there is no teaching program or it is very imperfect [9].

Given the increasing rate of cardiovascular disease in Iran, the lack of studies on the effect of self-care learning in patients with cardiovascular lead to the current study. The study aimed to examine the effect of self-care learning on awareness and performance in patients with coronary syndrome hospitalized in ISU of educational hospitals in Qom, Iran.

Materials & Methods

This is an experimental study conducted in hospitals affiliated with Qom University of Medical Sciences. Over 30-year old patients who hospitalized in ICU by the heart expert diagnosing coronary syndrome in 2015, were chosen as the potential population of the study. Sampling was performed gradually, through the convenience method. Refer to similar studies [18, 19, 21] and coefficient of 95% and 80% of test power, 70 subjects of patients with coronary syndrome were randomly selected, among which 35 subjects were allocated to experiment group and 35 to control group.

Data was gathered by questionnaire and checklist. Scientific validity and reliability of tools were evaluated by content validity and T-test used in the study of Mangolian Shahrabaki *et al.* [21]. Content validity of tools was enhanced by revision and confirmation of advisor and supervisor. The questionnaire consisted of 3 parts with 69 questions and 48 sentences. The first part had 12 questions related to demographic characteristics of patients (age, sex, marital status, job, duration of suffering from the disease, number of hospitalization, their view about self-care ability, educational record related to disease, sources of obtained information and the presence of helping in home). Second part consisted of 57 questions devised to determine the participants' awareness; general information about disease (6 questions; maximum of 12 scores), awareness of medical diet (24 questions; maximum of 48 scores) and awareness of non-medical diet (27 questions; maximum of 54 scores). The scale was made in 3 options including "yes", "no", and "I don't know". The correct answer got score 2, incorrect answer got score 0, and "I don't know" got 1. Third part consisted of 48 sentences examined the patients' performance; medical diet performance (15 sentences; maximum of 60 scores) and non-

medical performance (33 sentences; maximum of 132 scores), in a 5-level scale, it scored from "never" (0 scores) to "always" (4 score). checklist to observe the ability of patients to control the pulse included 3 cases marked by researcher in forms of "yes" and "no"; correct answer had 1 score and the incorrect one did not get score.

Hospital and its branches' authorities have approved the plan of this study. Willing and qualified participants were asked to sign the agreement letter. At the first step, through completing the questionnaire in interview sessions, researcher evaluated the awareness and performance of patient about disease nature, and medical and non-medical diet, patients' ability to control the pulse was recorded through observation. Then, educational program in combination of individual education, question and respond, discussion, showing a film, training and educational pamphlet, was implemented. This program was hold during 2 sessions in 15 to 20 minutes in calm environment when patient was hospitalized and had appropriate physical and mental conditions. Educational substances included issues about heart anatomy and physiology, disease nature, drug consumption, necessary care about drugs, observing diet, activity and rest, stress control, dangers of smoking and visit doctor when it is necessary; related educational pamphlets were also given to them to follow the self-care. Content of this program has been compiled based on the related papers and books and consultation with supervisors. To identify the effect of educational program a month after education, the researcher evaluated awareness and performance of each patient through interviewed questionnaire and observation. At the end, control group has been given necessary educations with presenting educational pamphlet to observe moral remarks. Carrying out the research carefully, all stages of interventions and evaluations were done by researcher.

Data was analyzed by SPSS 23. In all self-care stages before and after inside-group intervention, the score of awareness and performance was evaluated by Wilcoxon signed-rank test and Mann-Whitney test was used to determine differences between experiment and control groups.

Findings

Age mean in control group was 60.59 ± 13.11 and 60.65 ± 10.35 in experiment group. 24.3% (n=17) of participants were men in experiment group and 28.6% (n=20) in control group. 37.1% (n=26) of experiment group and 47.7% (n=33) of control group were married. Remarkable part of participants have been hospitalized less than 2 times; experimental group (40%; n=28) and control group (41%; n=29). Affliction duration in most of participants has been less than 10 months in both groups; control (33%; n=23) and experimental (21%; n=15). There was no statistically significant

difference between two groups in self-care awareness and performance before intervention. The difference between two groups in awareness area was -5.39 ($p < 0.001$) and in performance area was -19.49 after intervention ($p < 0.001$).

The mean of changes of total awareness score of self-care in control group was 0.57 ± 1.14 ($p < 0.004$). In experimental group, its changes was 8.40 ± 9.39 ($p < 0.001$). The mean of self-care performance scores has been increased about 32.13 ± 6.12 in experiment group ($p < 0.001$) and the improving self-care performance of control group was 0.98 ± 1.11 ($p < 0.001$; Figure 1).

Figure 1) Mean of awareness and performance scores in different area of self-care and its changes

Parameters	Information about disease	Ability of controlling pulse	Medical diet	Non-medical diet	Total score
Experiment (Awareness)					
Before intervention	6.65 ± 1.43	-	23.97 ± 2.47	34.28 ± 3.08	64.91 ± 3.66
After intervention	7.71 ± 1.67	-	26.40 ± 3.38	39.20 ± 8.97	73.31 ± 9.87
p Value	<0.001	-	<0.001	<0.001	<0.001
Control (Awareness)					
Before intervention	6.34 ± 1.13	-	24.90 ± 1.72	35.85 ± 2.28	64.55 ± 3.04
After intervention	7.31 ± 1.54	-	24.94 ± 1.23	35.74 ± 2.49	65.71 ± 3.33
p Value	0.02	-	0.75	0.01	0.004
Experiment (Performance)					
Before intervention	-	0.48 ± 0.78	35.48 ± 6.75	74.64 ± 7.51	1.63 ± 1.56
After intervention	-	2.42 ± 0.88	47.7 ± 5.28	92.62 ± 6.57	7.16 ± 1.84
p Value	-	<0.001	<0.005	<0.001	<0.001
Control (Performance)					
Before intervention	-	0.31 ± 0.80	35.51 ± 6.86	75.69 ± 6.74	1.11 ± 1.02
After intervention	-	0.37 ± 0.84	35.77 ± 6.70	76.30 ± 6.72	1.26 ± 1.48
p Value	-	0.15	<0.01	<0.001	<0.001

Discussion

In this study, the effect of self-care learning on awareness and performance of patients with coronary disease was investigated in hospitals attached to Qom University of medical sciences in 2015. The results showed that self-care learning program increased the awareness and performance of patients with chronic coronary syndrome. Also, findings showed that the score mean of awareness and performance regarding to disease and medical and non-medical diets were considerably increased in experimental group than control one. Similar to current findings, results from research has been done on 80 patients with heart failure by Mangolian Shahrabaki *et al.* has shown that score mean of awareness and performance of patients considerably increased after a month of learning [21]. The research on 115 patients with heart failure carried out by Rencalli *et al.* shows the

awareness of patients considerably increased 2 weeks after learning and this increase has been high until 12 months after learning, so that, this high awareness led to improve the self-care behaviors [19]. In other study, a learning intervention about non-medical diet of patients with heart-congestion failure accompanied with 90% increase in awareness of studied samples and researchers believe that this awareness's increase has motivated the patients to observe self-care because re-hospitalization and mortality in patients of experimental group have considerably decreased. Several studies showed the effect of learning on awareness of patients; study carried out by Daryasari has shown that awareness caused to increase in self-care ability [1]. Goli *et al.* [2] has demonstrated increasing in awareness level causes the decrease in body mass through increasing body movement, which affects the decrease of

heart attack (coronary thrombosis). Seraji *et al.* states face to face teaching leads to improve knowledge, attitude and belief of people toward chronic coronary syndrome causing its signs to be delayed [22]. The study done by Tomita *et al.* is in line with this study. Changing the behavior and life style was the main purpose of his study [23]. This study shows that learning leads to increase the awareness and change self-care performance of patients. Zafari Nobari *et al.* writes, although learning the self-care behaviors has less effect on performance of depressed patients with heart failure, appropriate learning leads to change these behaviors [24]. In addition, changing the behavior is evident in study done by Roncalli *et al.* In their study, self-care behavior have increased in experimental group in 1 to 3 months after performing the learning program and has improved life quality [19]. According to Sivoshi *et al.*, correct self-care decreases re-hospitalization and recurrence of disease; this issue increases the life quality and decreases the life costs [25]. Antonakoudis *et al.* have found that there is strong relation among self-care behaviors and improving health condition and life quality [26].

According to these studies, it seems that teaching the patients and institutionalizing it by repeating and controlling in familiar environment like home can be a factor of promoting performance. According to total performance of studied unites, performance of experimental group significantly improved than control group. The researcher believes that promoting the performance resulted from holding systematic and simple sessions. In different researches, researchers concluded that hospitalizing and motivating after participating in the study is the factor to increase the awareness and performance of patients in experimental group. Activities related to self-care can play important and effective role in promoting health-care behaviors, if it performs by active teaching methods, being aware of attitudes and opinions of patients, and providing appropriate environment for patients. Furthermore, presenting understandable topics based on individual needs and using individual teaching with question in a few sessions can be useful to reach better outcomes. According to above mentioned

issues, it can be concluded that teaching the self-care behavior can provide patients with better condition and awareness of present abilities can increase the life expectancy, self-confidence and life quality and decrease the isolation.

Researcher faced with problems such as noise in environment as well as physical and mental conditions affecting teaching. Learning program was tried to be performed in calm place and appropriate physical and mental condition. But, some individual differences of patients affected on responding the questions, teaching and observing taught points. These uncontrollable obstacles are considered as limitations of study.

Given the effect of learning program on awareness and performance of patients with coronary syndrome, it is suggested that authorities and planners of medical sciences use new methods during short-term sessions in hospitalization time. It is suggested to establish the consultation centers in heart clinics, so that, patients can contact this center to guide and solve problem and learn self-care. Finally, it is suggested to investigate the effect of same programs on frequency of hospitalization and curative costs for patients with heart failure and other chronic diseases by following from 1 to 3 years.

Conclusion

The application of an educational self-care program raises the awareness and improves the performance of the patients with coronary syndrome.

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