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Original Article

Effect of Illness Perception Correction - Based Educational Program on Quality Of Life and Self- Care in Patients with Heart Failure: a Randomized Controlled Trial

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ABSTRACT

Introduction: Because of the chronic nature of Heart Failure (HF), low Quality of Life (QoL) and poor self-care are prevalent among patients with HF. Thus, the aim of this study was to evaluate the effect of illness perception correction- based educational program on QoL,and self- care in patients with HF.

Methods: In this randomized controlled trial, 78 eligible patients were included in the study from Rajaei Heart Center (Tehran, Iran) and randomly assigned into intervention and control group with 1:1 allocation ratio. The intervention was a combination of illness perception correction- based education program (30- minute sessions over 3 consecutive days) and 10-minute phone calls made once a week in the course of 8 weeks. The control group received usual care. The primary outcome was quality of life and secondary outcomes were self- care and illness- perception which were measured at baseline and at the end of the study. SPSS version 13 was used for the analysis.

Results: Out of 76 eligible patients, 70 patients with HF finished the study. Although the mean of quality of life, self-care, and illness perception were not different at baseline, QoL (45.2 (8.3) VS 66.8 (15.4); P<0.001), self-care (18.5 (4.5) VS 37.1 (7.2); P<0.001), and illness- perception (183.6 (8.4) VS 151.2 (24.5); P<0.001) improved following the program in the intervention group in comparison to the control group.

Conclusion: According to the study findings, this program can be applied by nurses for patients with HF as a discharge plan in order to improve their QoL, self-care, and their illness perception.

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Introduction

Heart Failure (HF) is a common clinical syndrome with high prevalence of comorbidities.[1] Poorly organized care and lack of continuity besides too many medications and medical visits, limited access to medical services, and inadequate communication between health care professionals are such treatment burdens experienced by patients with HF.[2] According to the previous studies, HF has a negative effect on quality of life (QoL)[3] and patients with HF had a poor and undesirable level of QoL.[4,5] In addition, self-care behaviors are sub-optimal and unsatisfactory among patients with HF[5,6] that need to be improved worldwide.[6]

Thus, interventions focusing on specific self- care behaviors and on controlling some amendable variables implementing by nurses are needed to improve the self-care and QoL of patients with HF in both developed and developing countries.[3-7] In order to prevent the chronicity, illness perceptions and expectations have been recommended as a useful starting point for further interventions.[8] Patients` perception regarding their disease is one of the aspects of personal factors. This common- sense model hypothesizes that patients with mental representations of their disease can manage their health problem effectively.[9] Moreover, as illness perceptions can affect the patients` health and well-being, a negative view to the illness was associated with equally bad experiences of fatigue, and lowered QoL.[10] Interventions promoting illness perception and beliefs may cause improvement in treatment adherence,[11] adherence to secondary prevention behavior, patients` outcomes,[12] ideal management of disease, and decreasing the amount of morbidity and death.[11] Therefore, there is a great need in paying attention to patients` illness perception[13] and providing personalized health education or intervention programs in order to promote their illness perceptions.[14] On the other hand, effectiveness of person-centered approach focusing on patient's illness beliefs and emotional state on improving patients` outcomes has been reported to be quite effective in optimizing the patients` outcome.[15] Education based on Leventhal self-regulation model is a specific kind of education provided according to the patients ` illness perception, with the ultimate goal of correcting it. It focuses on 5 components of disease perception, including identity, cause, time- line, consequences, and curability/ controllability.[16]

In the previous studies, strong associations have been found between the perception of HF consequences and emotional (or physical) QoL, self - care confidence, and illness coherence[15] as well as, illness perception and self - care behavior except for timeline and consequences.[14] Although, the efficacy of the program has been reported on certain aspects of QoL and self-care in some countries, and on decreasing anxiety, depression and increasing illness perception among patients with myocardial

infarction (MI) in Iran,[17] its efficacy has yet not been evaluated among patients with HF with different health care behaviors in our clinical settings. Thus, the aim of this study was to evaluate the effects of illness perception correction- based educational programs on QoL and self-care in patients with HF.

Materials and methods

We conducted a single blind randomized controlled clinical trial on patients with HF. The research ethics committee (REC) (No.93/d/182/130) and institutional review board (IRB) of Tehran University of Medical Sciences (TUMS) (Tehran, Iran) approved the study protocol. Moreover, it was registered on IRCT.ir by IRCT code no. IRCT201406094443N11.

The inclusion criteria were a definite diagnosis of HF, ejection fraction (EF) of less than 40%, HF functional class II and III, being between 30 to 65 years of age, poor illness perception (as determined by scores of lower than 121), ability to understand and speak Farsi, having no known defects of sight, hearing, speech, having no cognitive or psychiatric disorders, and not suffering from other chronic diseases. The patients whose clinical conditions worsened during the study, had a tendency not to participate in the study or answer the phone calls of call- follow- up, and were discharged before the delivery of the intervention sessions were excluded from the study. In this study, based on 99% confidence level (α= 0.01), and 95% study power (β=5%), and physical health score of QoL between the intervention and control group (42.1 (22.8) vs 23.9 (11.9),[17] the sample size was 35 patients per group. By considering the attrition rate of 10 % during the study period, the final sample size rose to 39 patients in each group. Thus, 78 eligible patients were recruited between April and July 2014 from the Cardiac Internal Medicine ward and Coronary Care Unit in Rajaei Heart Center affiliated to Iran University of Medical Sciences (Tehran, Iran). Before randomization, the participants who met all inclusion criteria signed written informed consent forms. Envelope shuffling randomization method was used for random allocation which was conducted by a research nurse. Thus, participants were randomly assigned into two groups of intervention and control with 1:1 allocation ratio.

In the intervention group, illness perception correction-based education was provided for each patient. The education was based on Leventhal self-regulation model.[16] It was carried out face-to-face, individually, and in the ward by the researcher nurse over 3 days in a row (in 30-minute sessions). In the first session, we explained the identity and causes of the disease. Then, their incorrect perception of these two components were discussed. In the second session, the previous session's issues were reviewed and then, the patient's perceptions on time- line, consequences, and curability/ control ability were assessed and discussed. In the third session, the individual care program was provided, and the education delivered in the previous sessions was reviewed to be stacked in the patient`s mind. Then, written and verbal education on the patients` medications was provided. An educational booklet was delivered to them, too. During 8 weeks after getting discharged, the patient`s questions were answered and they were encouraged to adhere to the pieces of advice provided through 10-minute-long phone calls once a week. Moreover, the timing of the phone call was previously arranged by the researcher according to patient preferences.

The control group received no intervention. They received the routine nursing care, including education on medications and advice to limit daily salt and water, weigh themselves daily and other advice related to their disease. In order to respect the ethical principal of justice, an educational booklet was delivered to them at the end of the study. In order to assess the eligibility criteria, illness perception of the patients was measured by illness perception questionnaire (IPQ) according to patient`s self- report. IPQ was first developed by Weinman in 1996.[18] IPQ contains 72 items with five-point Likert from totally agree to totally disagree on symptoms (12 items), progress (7 items), outcomes (8 items), controllability/cur ability (11 items), and causes (16 items). The total score was obtained by adding up item scores to a maximum of 242. The mean score of less than 121 and greater than 121 were considered as negative and positive perceptions, respectively. A Farsi version of this questionnaire was prepared by forward- backward translation method. Then, face and content validity of the IPQ was confirmed by 10 faculty members of nursing and midwifery school at Tehran university of medical sciences. To determine its reliability, the IPQ was completed by 15 patients with HF and Cronbach's alpha was 0.88. The primary outcome was Quality of life (QoL).

The secondary outcomes were self-care and illness-perception which were evaluated at baseline and at the end of the study. Minnesota Living with HF Questionnaire (MLHFQ) was used to measure QoL. MLHFQ was developed by Rector in 1993.[19] In Iran, its validity and reliability (Cronbach's alpha = 0.9) were also investigated by Abbasi, et al., in 2007. It consisted of 21 items on physical (13 items), socioeconomic (4 items), and psychological (4 items) aspects of life. Each item scores were between zero to five to represent the best and the worst situation, respectively. Higher scores indicated the lower QOL.[20] Self- care of patients was measured by European Heart Failure Self-care Behavior (EHFSCB). Content validity of the EHFSCB questionnaire was approved by 20 faculty members and it was a reliable questionnaire (Cronbach's alpha = 0.71) containing 12 items, and the scores varied from 12-60. Lower scores indicated better self-care. Scores between 12 and 28, 29-44 and 45-60 were considered as good, moderate, and poor self-care, respectively.[21] Other study variables were demographic and clinical variables, including age, gender, marital status, insurance, smoking, level of education, job, income, and family history of cardiovascular diseases (CVDs), and disease duration. The data were analyzed by SPSS version 13 with per protocol approach. Shapiro Wilk test was used to determine the normality. Descriptive statistics and statistical tests (independent t-test and Chi-square test) were used. A P- value less than 0.01 was considered statistically significant.

Results

In this study, the eligibility criteria of 105 patients with HF were assessed. Out of these, 78 eligible patients were included and 70 patients finished the program (attrition rate ≅ 10%). Therefore, data related to 35 patients in each group were analyzed. The study process from recruitment to analysis has been shown in Consolidated Standards of Reporting Trials (CONSORT) flow diagram (Figure 1).

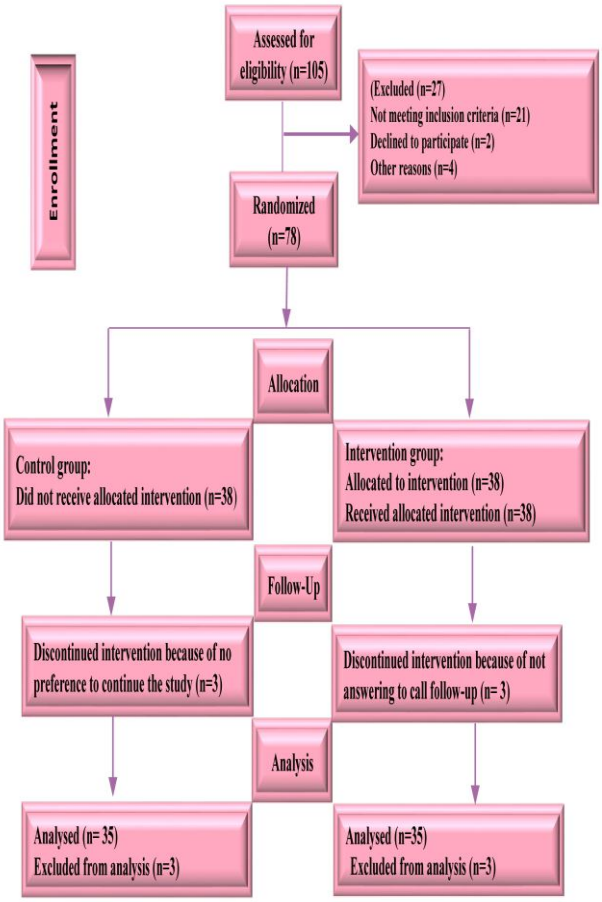

Figure 1: Consort flow diagram

Table 1 indicated the demographic and clinical characteristics of the patients in the intervention and control groups. This table shows that the two groups had no difference with respect to demographic and clinical characteristics at baseline (P>0.01) (Table 1).

QoL, whether totally with regard to the three aspects, was not different between the two groups at baseline. While QoL improved significantly, following the program in the intervention group compared with the control group, whether totally with regard to the three aspects (P<0.001) (Table 2).

Although self-care was not different between the two groups at baseline (0.066), it became better in the intervention group in comparison to the control group (P<0.001). In addition, no difference was found for illness perception between the two groups at baseline (P=0.190). However, it improved significantly following the program (P<0.001) (Table 2).

Table 1: demographic and clinical characteristics of patients in the intervention and control group

Demographic and clinical variables	Intervention (n=35) n (%)	Control (n=35) n (%)	P
Age (years)[£]	71.4(7.7)	65.7(10.9)	0.87
Gender			0.62
Male	19 (54.3)	22 (62.9)	
Female	16 (45.7)	13 (37.1)	
Marital status			0.20
Single	24 (68.6)	23 (65.7)	
Married	7 (20)	7 (20)	
Divorced & widowed	4 (11.4)	5 (14.3)	
Level of education			0.68
Elementary school	7 (20)	10 (28.6)	
High school	21(60)	18 (51.4)	
Academic	7 (20)	7 (20)	
Insurance			0.23
Yes	35 (100)	32 (91.4)	
No	0 (0)	3 (8.6)	
Smoking			0.76
Yes	6 (17.1)	8 (22.8)	
No	29 (82.9)	27 (77.2)	
Income			0.20
Enough	12 (34.3)	6 (17.1)	
Not enough	23 (65.7)	29 (82.9)	
Job			0.88
Yes	13 (37.1)	16 (45.7)	
No	22 (62.9)	19 (54.3)	
Family history of CVDs			0.51
Yes	16 (54.3)	20 (57.1)	
No	19 (45.7)	15 (42.9)	
Disease duration (month)[£]	38.3 (33.6)	37.0 (34.4)	0.60

[£]Mean(SD)

Table 2: Comparison of mean and standard deviation of quality of life, self- care, and illness perception between intervention and control groups

Variable	Intervention (n=35) Mean (SD)	Control (n=35) Mean (SD)	P
Quality of life			
Physical			
Before	45.7 (10.1)	47.8 (10.9)	0.42
After	58.5 (5.9)	41.7 (10.1)	<0.001*
Social			
Before	13.2 (2.9)	14.4 (3.1)	0.08
After	8.4 (1.9)	13.3 (2.8)	<0.001*
Emotional			
Before	12.1 (4.3)	12.1 (4.8)	0.98
After	8.3 (2.8)	11.8 (4.1)	<0.001*
Total			
Before	71.1 (13.9)	74.3 (16.3)	0.37
After	45.2 (8.3)	66.8 (15.4)	<0.001*
Self- care			
Before	35.2 (13.9)	40.3 (8.1)	0.06
After	18.5 (4.5)	37.1 (7.2)	<0.001*
Illness- perception			
Before	117.6 (6.2)	112.9 (9.6)	0.19
After	183.6 (8.4)	151.2 (24.5)	<0.001*

*statically significance,

Discussion

In this study, we found a positive effect brought about by an illness perception correction- based education program on the study outcomes. Negative illness

perception is associated with poor physical and mental health.[22] Patients with negative illness perception believed in non- controllable or curable, chronic identity and severe consequences of the disease[10] that result in worse experiences of fatigue, depressive symptom tology, and lowered QoL.[10,23] In our study, the total QoL improved significantly after the illness perception correction based educational program. Previous studies have showed that self- care education, applying effective care model, and administrating the continuous care model can enhance the QoL among patients with myocardial infarction (MI), and HF in the intervention in comparison to the control group, too.[24-26] In addition, in-hospital illness perception intervention can improve rate of return to work (i.e. patients in the intervention group returned to their work faster than the control group,[27] and functional outcomes.[28] Thus, due to the relationship between illness perceptions and QoL, interventions for changing illness perceptions may be beneficial on improving QoL.[29]

There are evidences indicating that implementation of illness perception intervention as a self- regulation model by health care providers provides an effective framework for adherence to treatment[13,30,31] and can lead to a reduction in medical costs and burden of frequent hospital admissions among patients with HF.[32] Also, effectiveness of educational programs on promoting self-care behaviors in patients with HF has been shown in the previous literature. In Shojafard et al., self- care was reported to be better in the intervention group than it was in the control group at the end of the study (54.49 (8.01) VS 29.29 (9.02), P<0.0001).[33] In addition, in Ghahramani et al., the patients` performance related to self- care improved significantly in the intervention group compared with the control group (80.75 (3.7) VS 54.78 (6.24) , P<0.0001).[34] We found a significant increase in the self-care of patients with HF following the program, too. In our study, during the study period, the patient`s illness perception improved significantly following the program in the intervention group in comparison with the control group. In line with our study, Broadbent et al., indicated that brief in-hospital illness perception intervention can change perception.[27] In contrast to our study, however, Bijsterbosch et al., stated that illness perceptions can change over time because of the disease outcome.[35] Thus, the improvement of illness perception in our study might well have been brought about as a result of both the intervention and time.

Conclusion

In conclusion, the illness perception correction - based educational program may improve QoL and self- care in patients with HF. Nurses as key members of the health care team play an important role in patient education during the patients` hospitalization and after discharge from hospital. Therefore, this specific kind of education is recommended as an effective non-pharmacological intervention in order to promote QoL and self- care in patients with HF.

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Ethical issues

None to be declared

Conflict of interest

The authors declare no conflict of interest in this study.

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