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## Effects of Spiritual Care Program on Quality of Life in Patients with Heart Failure

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### Abstract

**Background:** Heart failure (HF) is the common result of most heart disorders. The quality of life (QoL) of these patients is severely impaired and they need continuous care. Spiritual care is a type of nursing care that may affect the QoL of patients.

**Aim:** The present study aimed to determine the effect of spiritual care program on QoL in patients with HF.

**Method:** This randomized controlled trial was performed at Rajaie Cardiovascular Medical and Research Center, Tehran, Iran in August 2020. In total, 84 patients were selected through convenient sampling and randomly assigned to two groups using block balanced randomization. Iranian Heart Failure Quality of Life (IHF-QoL) questionnaire and Parsian and Dunning spirituality questionnaire were complemented by the two groups before and after 1-month follow-up. The intervention was performed for the intervention group in two virtual educational sessions (each 1.5 h) as well as a 1-month follow-up three times a week for 1 h per session via WhatsApp. Finally, the data of 74 patients were analyzed using SPSS software (version 22). The significance level was considered at  $P < 0.05$ .

**Results:** The groups were homogenous in terms of demographic characteristics. Dimensions of QoL in mental limitations ( $P < 0.001$ ) and self-care ( $P < 0.01$ ) were significant in the intervention group, compared to the control group. Therefore, the spiritual care program significantly increased the total score of QoL ( $P < 0.01$ ).

**Implications for Practice:** Results of the study indicated that the spiritual care program greatly improved the total score of QoL and can be considered a part of the holistic care program.

**Keywords:** Heart disease, Nursing care, Quality of life, Spiritual, Virtual education

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## Introduction

Heart failure (HF) is a functional disorder of the ventricle during filling and emptying which reduces the ability of the heart to meet the metabolic needs, and causes dyspnea, fatigue, peripheral edema, and functional decline (1). HF is one of the most prevalent cardiovascular disorders. The prevalence of HF is increasing, despite recent advances in technical diagnostic tools and therapeutic methods, as it affects approximately 26 million individuals worldwide (2). According to a recent report, about 6.5 million individuals suffer from HF in the USA, and thousands of new cases are also diagnosed every year (3). In Iran, over one million individuals and about 1% of all adults over 40 years are affected by HF (4). HF is a main factor of mortality due to its complications around the world (5).

It should be noted that HF affects the quality of life (QoL) (6). The QoL is the perception of an individual from hope, physical, social, psychological, health status, and satisfaction (7). In other words, QoL is a culture-based logical process that summarizes values, beliefs, symbols, and experiences shaped by the culture, and provides a path to recognize conditions and experiences in human life (8). Finally, despite various descriptions presented for QoL, there is no consensus on this concept. In the present century, QoL is one of the major concerns of health experts and is recognized as an indicator for measuring health status in health-related research. In this regard, the present study aimed to investigate QoL and obtained results to empower individuals to live with more pleasure and meaning (9). Patients with HF failed to have a qualified QoL as HF impairs QoL more than any other chronic disease (10).

Spiritual care is the main factor in nursing that determines how individuals react to their disease and is the most important factor to achieve balance in preserving health and disease (7). Spiritual care can be effective in the QoL of patients with chronic diseases by decreasing anxiety and depression and promoting adaptation mechanisms in them (11, 12). In other words, religion and spirituality are considered important sources of physical and psychological adaptation for those with chronic diseases (13). Florence Nightingale has always emphasized that considering the spiritual and mental dimensions of the patients is necessary for nurses. In addition, nurses were asked to be committed to the concept of holistic care and understand the importance of considering physical, mental, emotional, social, spiritual dimensions, and the meaning of demands and cares (14). Although most nurses consider spiritual care an important part of holistic care, only about 28% of them practice regularly, and about half of them rarely perform spiritual care, and in most cases, it is neglected (15). In this regard, spiritual care has been considered by healthcare providers in recent years (16).

The study on the effect of religious intervention based on Tavasol prayer indicated that QoL and mental status of the patients with permanent pacemakers significantly improved by this intervention (17). Results of the aforementioned study revealed that spiritual care decreased death anxiety in patients with heart disease admitted to the Intensive Care Unit (ICU) (18). Results of another study indicated that spiritual care reduced pain in patients undergoing Coronary Artery Bypass Graft (CABG) (19). Another study conducted in 2018 showed that group spirituality therapy improved QoL and spiritual health of patients with Multiple Sclerosis (MS) in Ahvaz (20). Results of another study showed that spiritual therapy promoted QoL in women with breast cancer in Tehran, Iran (21).

The QoL in HF patients is lower than those with other chronic diseases. Moreover, the COVID-19 pandemic negatively affects the QoL of patients (22, 23). COVID-19 causes numerous challenges including pain, fear, loneliness, and a near-death experience for everyone, especially patients (23, 24). In addition, patients are asked to consider their spiritual needs especially in critical conditions (25). Various studies have been conducted on the effect of spiritual care programs on QoL in coronary artery diseases, permanent pacemakers, or myocardial infarction which are a small part of the HF research community. Limited studies, to the best of our knowledge, are available on the effect of spiritual interventions on QoL in HF patients whose QoL is severely impaired, compared to other chronic diseases, such as cancer or MS, especially in critical conditions. Furthermore, most of the previous interventions are based on prayer therapy. However, in the present study, music therapy and listening to the sound of nature via CD have been used as well as prayer therapy. Therefore, the present study aimed to determine the effect of spiritual care program on QoL in HF patients.

## Methods

The present randomized controlled trial was performed on two groups at Rajaie Cardiovascular Medical and Research Center, Tehran, Iran in August 2020. Inclusion criteria were 1) HF based on

clinical symptoms and echocardiography which represents ejection fraction less than 40% based on patient records approved by a cardiologist and also HF with Class II and III based on the classification of New York Heart Association (26), 2) age range of 18-65, 3) being a Shi'a Muslim, 4) being alert, 5) not having a mental disability and psychiatric disease. Exclusion criteria were unwillingness to continue participating at any step of the study, an absence from educational sessions, critical and urgent conditions, and lack of access to Whatsapp during the study.

The studied demographic covariates were age, gender, level of education, marital status, and other demographic variables as well as disease information. Iranian Heart Failure Quality of Life (IHF-QoL) Questionnaire was designed and approved by Naderi et al. (2012) (27) which consists of 16 questions in five dimensions. These dimensions were the severity of disease symptoms (items 1, 2, 3, 4, 6), physical limitations (items 7-1 to 7-6), mental limitations (items 5, 9, 11), social aspects (items 8, 10, 12, 13), self-care (items 14, 15) and total assessment of satisfaction of patient on QoL (16). It should be mentioned that the items were scored based on a 3 or 4-point Likert scale. The maximum score of IHF-QoL was equal to 66. The median score (inter-quartile range) of the questionnaire was equal to 41 (32-47) which proposed a relatively moderate satisfaction among participants and the minimum score was equal to 21. It must be noted that the higher the score, the better the QoL of the patient. Validity and reliability were confirmed and the Cronbach's alpha was 0.92. Intra-class correlation coefficients (ICCs) were significant for all components (from. 708 to. 883; all P values<0.001) (27). The total Cronbach's alpha of the QoL questionnaire was equal to 0.844 in the present study.

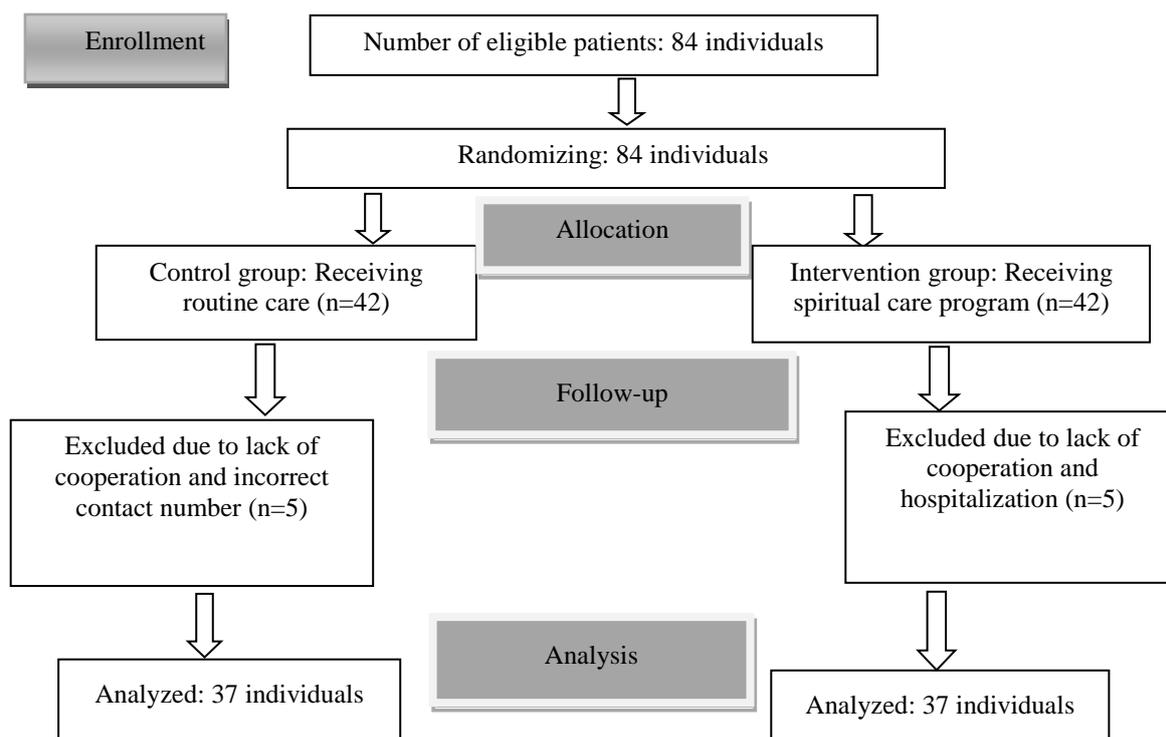
The spirituality Questionnaire was created by Parsian and Dunning (2009) to assess the importance of spirituality in the lives of people and measure its various dimensions. This 29-item self-report tool is scored on a Likert scale ranging from 1 (completely disagree) to 4 (completely agree). The various dimensions of this questionnaire include self-awareness (10 items), the importance of spiritual beliefs in life (4 items), spiritual activities (6 items), and spiritual needs (9 items). Parsian and Dunning obtained the overall alpha coefficient of the questionnaire and the alpha coefficient of the subscales as 0.94 and 0.80 to 0.91, respectively, which indicates the overall internal consistency of the questionnaire. It should be mentioned that its reliability was 0.82 (28). Khezrloo et al. (2019) estimated its validity and reliability at 0.87 and 0.79, respectively (29). The total Cronbach's alpha coefficient of the spiritual questionnaire in the present study was 0.937. This questionnaire was completed before starting the intervention to match the two groups based on their spirituality scores.

In total, 74 out of 84 subjects completed the intervention and follow-up due to the loss of 5 out of the 42 patients in both intervention and control groups (Figure 1). In total, 84 patients were firstly selected based on the inclusion criteria and convenience sampling method and were allocated to the intervention and control groups using sealed envelopes. Pockets A or B were written in sealed envelopes. Pocket A was the sign of the intervention group and B was the sign of the control group. According to the sample size (n=84), 14 possible states were created for 6 blocks. This study was a single-blind trial.

After obtaining written consent, a demographic form and two questionnaires were completed by the groups and then an educational booklet and two CDs were given to the intervention group. Every 5-7 patients in the intervention group were allocated to one group to receive a spiritual care program with two sessions of virtual education for 1.5 h. The intervention also included listening to Mozart music and the sounds of nature through the WhatsApp group. Subsequently, the spiritual care program continued for 1 h three times a week for 1 month to practice spiritual care via WhatsApp. At the end of the 1-month follow-up, QoL and spirituality questionnaire were completed by phone call. After finishing a 1-month follow-up, Spiritual care program was conducted for the control group via WhatsApp. If any participants missed a session, they could not continue the intervention. All participants must be present at a designated time to begin educational sessions.

The spiritual coach or the researcher answered the questions of participants. The training sessions were supervised by a spiritual coach who was present in all groups formed to teach and practice spiritual care programs and cooperated in presenting educational discussions and also provided a spiritual booklet. The researcher was present in all sessions as well. Spiritual interventions included strengthening and modifying the four dimensions of human communication (with God, others, self, and creation).

Strengthening the communication with God was through praying and supplication, reading Quran, thanking God for the blessings, trusting in God in enduring diseases and problems. Communication



**Figure 1. Consort flow diagram of the participants**

with self was through reinforcing the importance of self-esteem and patience, reading prayers related to the increase of patience. Communication with others was through forgiveness, charity, goodness to develop relationships with people. Finally, communication with nature was through looking at the water and trees, listening to the song of birds, using bright and joyous colors, being kind to animals and growing plants, and using perfumes (30).

Prayer therapy was also used to strengthen self-esteem, forgiveness, and thanksgiving using the praying book. One of the CDs was Mozart's symphonies which the patient listened to every night for 1 month (31). The other was the sound of nature which the patient listened to for 15 min in the morning or afternoon for 1 month (32). The first session was about the importance of the relationship with God and oneself and listening to a section of each CD at the end of the session. The second session was on the importance of connecting with others and nature and listening to a part of each CD at the end.

Ethical issues, such as plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancy have been completely observed by the authors.

After finishing the 1-month follow-up, the spiritual care program was performed in two educational sessions of 1.5 h. The intervention was followed up after 1 month with 1-h sessions three times per week to practice spiritual care for the control group via WhatsApp. The collected data were analyzed in SPSS software (version 22.0). The quantitative and qualitative data were expressed as "mean± standard deviation (SD)" and "frequency (percentage)", respectively. An independent two-sample t-test was used to compare quantitative variables in two groups.

Additionally, the Chi-squared test and Fisher's exact test were used to compare the frequency of qualitative variables. The QoL dimensions and total score of QoL were compared between the two groups before and after the intervention using the paired t-test. In addition, Multivariate Analysis of Covariance (MANCOVA) and a total score of QoL Analysis of Covariance (ANCOVA) was used to compare QoL dimensions after 1-month follow-up in two groups. Moreover, a p-value of less than 0.05 was considered statistically significant.

## Results

The mean±SD of the age of the intervention and control groups were  $46.27 \pm 11.24$  and  $51.11 \pm 10.49$ , respectively ( $P=0.060$ ). No significant difference was observed between the two groups in terms of demographic and disease information as can be seen in Table 1.

**Table 1. Demographic characteristics and disease information in patients with heart failure in intervention and control groups.**

Variable	Group		P-value
	Control (n=37) N (%)	Intervention(n=37) N (%)	
Gender			
Female	12 (32.4)	15 (40.5)	0.469*
Male	25 (67.6)	22 (59.5)	
Marital Status			
Married	31 (83.8)	36 (97.3)	0.107**
Single	6 (16.2)	1 (2.7)	
Education			
Primary school	5 (13.5)**	3 (8.1)	0.552**
Middle school	9 (24.31)	5 (13.5)	
High school	13 (35.1)	17 (45.9)	
College education	10 (27.0)	12 (32.4)	
Living with			
Wife and children	24 (64.9)	25 (67.6)	0.052**
Wife	6 (16.2)	11 (29.7)	
Others	7 (18.9)	1 (2.7)	
Residence			
Tehran	18 (48.6)	18 (48.6)	1.000*
Town	19 (51.4)	19 (51.4)	
Occupation			
Employed	15 (40.5)	13 (35.1)	0.764*
Housewife	9 (24.3)	13 (35.1)	
Retired	8 (21.6)	6 (16.2)	
Unemployed	5 (13.5)	5 (13.5)	
Underline disease			
Diabetes	3 (8.1)	4 (10.8)	0.099**
High blood pressure	9 (24.3)	11 (29.7)	0.601*
Hyperlipidemia	8 (21.6)	9 (24.3)	0.782 *
Cigarette smoking history	10 (27.0)	7 (18.9)	0.407**
History of drug use	5 (13.5)	4 (10.8)	0.999**

\*Chi-squared test, \*\*Fisher's exact

The mean±SD of the ejection fraction of the intervention and control groups were 25.81±5.21 and 24.73±4.85, respectively. A two-sample independent t-test indicated that ejection fraction was not significantly different between the intervention and control groups (P=0.359). Findings also showed that the mean±SD of spirituality scores before intervention were 91.76±10.29 and 90.05±11.84 in the intervention and control group, respectively (P=0.511). Moreover, after the intervention, the mean±SD of spirituality scores were 94.08±10.18 and 89.35±11.40 in the intervention and control groups, respectively (P=0.060). Additionally, the mean±SD changes of spirituality scores in the intervention and control groups were 2.32±2.33 and -0.70±1.54, respectively (P<0.001). Accordingly, it was found that the spirituality score increased in the intervention group, while it decreased in the control group after the intervention.

The comparison of the mean±SD total QoL score and its dimensions in two groups before and after the intervention without adjusting the effect of confounding variables (QoL and spirituality score) before intervention is shown in Table 2. Presumptions of the tests were assessed through MANCOVA before analyzing the data. Results of the Shapiro-Wilk test showed that frequency distribution scores of QoL dimensions in intervention and control groups were normal before and after a 1-month follow-up (P>0.05).

In addition, Box's M test indicated that the assumption of the equality of covariance matrices is

confirmed in the studied groups ( $F=0.906$ ,  $P=0.690$ ). Besides, Levene's test also represented that assumption of the equality of variances scores of QoL dimensions is approved in the studied groups ( $P>0.05$ ). Moreover, the two-by-two correlation coefficient of different dimensions of QoL ranged from 0.250 to 0.580 after the intervention which indicates a positive and moderate correlation between dimensions of QoL.

**Table 2. Comparison of the mean±SD total quality of life score and its dimensions in two groups before and after the intervention.**

Variable	Group					
	Control			Intervention		
	Time					
	Before	After intervention	P-value*	Before	After intervention	P-value*
Dimensions of QoL						
Disease severity	13.62±3.55	13.65±3.48	0.812	13.97±3.36	14.05±3.33	0.584
Physical limitations	11.32±2.55	11.24±2.44	0.183	11.84±2.68	11.70±2.69	0.343
Mental limitations	6.03±1.82	5.68±1.77	<0.01	6.00±1.99	7.68±1.56	<0.001
Social	8.19±1.87	7.95±1.76	<0.05	8.59±1.54	8.46±1.61	0.169
Self-care	5.68±0.67	5.68±0.67	1.000	5.78±0.58	5.84±0.44	0.160
Total satisfaction of QoL	2.35±0.59	2.32±0.63	0.324	2.38±0.68	2.41±0.60	0.711
Total QoL score	47.19±8.23	46.51±7.97	<0.01	48.57±7.64	50.14±7.32	<0.001

\*paired t-test, QoL: quality of life

The results of Pillai's trace test, Wilks' Lambda test, Hotelling's trace test, and Roy's Largest Root on the difference of intervention and control groups were significant as  $P<0.001$  in dimensions of QoL in patients with HF. The two groups were significantly and statistically different in at least one dimension of QoL ( $P<0.001$ ). In addition, values of Partial Eta Squared showed that about 70% of difference (changes) scores of QoL dimensions in two groups after 1-month follow-up is caused by the intervention (spiritual care program).

After adjusting the effect of confounding variables before the intervention, the effects of the intervention on the dimensions of mental limitations and awareness on disease and self-care of QoL were statistically significant ( $P<0.05$ ). In addition, Eta squared value in the dimension of mental limitations showed that about 80% of the difference of mental limitations in the intervention group after 1-month follow-up was caused by the intervention (spirituality care program) (Table 3).

**Table 3. Results of Multivariate Analysis of Covariance on dimensions of quality of life score after the intervention**

Dimensions of QoL	Source of effect	Sum of squares	Degrees of freedom	Mean squares	Statistics F	P-value	Eta squared	Test power
Severity of disease symptoms	Group	0.0635	1	0.0635	0.196	0.659	0.533	0.402
	Before intervention	201.451	1	201.451	620.900	<0.001	0.912	1.000
	Spirituality Score	0.6235	1	0.6235	1.921	0.171	0.201	0.276
	Error	19.467	60	0.3245				
	Total	7517.5	74					
Physical limitations	Group	0.006	1	0.006	0.032	0.860	0.401	0.540
	Before intervention	113.276	1	113.276	535.031	<0.001	0.899	1.000
	Spirituality score	0.271	1	0.271	1.280	0.262	0.210	0.200
	Error	12.702	60	0.2115				
	Total	5109.5	74					
Mental limitations	Group	30.021	1	30.21	91.048	<0.001	0.802	1.000
	Before intervention	56.1955	1	56.1955	170.428	<0.001	0.740	1.000
	Spirituality score	0.738	1	0.738	2.238	0.140	0.306	0.313
	Error	19.784	60	0.3295				
	Total	1.786	74					

Table 3. Continued

Social dimensions	Group	0.0805	1	0.0805	0.507	0.479	0.507	0.408
	Before intervention	56.7065	1	56.7065	356.858	<0.001	0.856	1.000
	Spirituality score	0.256	1	0.256	1.611	0.209	0.262	0.239
	Error	9.5345	60	0.159				
	Total	2594.5	74					
Self-care	Group	0.082	1	0.082	8.920	<0.01	0.630	0.836
	Before intervention	7.254	1	7.254	778.691	<0.001	0.928	1.000
	Spirituality score	0.0025	1	0.0025	0.244	0.623	0.004	0.708
	Error	0.559	60	0.0095				
	Total	1.238	74					
Total satisfaction of QOL	Group	0.001	1	0.001	0.022	0.882	0.487	0.522
	Before intervention	2.9895	1	2.9895	56.577	<0.001	0.758	1.000
	Spirituality score	0.0325	1	0.0325	0.617	0.435	0.100	0.121
	Error	3.17	60	0.053				
	Total	220.5	74					

QoL: quality of life

The ANCOVA presumptions of the tests were assessed before data analysis through Analysis of Covariance. Results of the Shapiro-Wilk test showed that the frequency distribution of QoL scores in two groups was normal before and after the 1-month follow-up ( $P>0.05$ ). In addition, Levene's test showed that the assumption of the equality of variances of QoL scores was approved in the studied groups ( $P>0.05$ ). Group effects in QoL were statistically significant after adjusting the effect of confounding variables (Qol and spirituality score) before intervention ( $P<0.05$ ). In addition, eta square on QoL indicated that 67.5% of the difference (changes) of total QoL score in two groups was caused by the intervention after one-month follow-up (spiritual care program) as can be presented in Table 4.

Table 4. Results of Analysis of Covariance on total QoL score after intervention

Variable	Source of effect	Sum of squares	Degrees of freedom	Mean squares	Statistics F	P-value	Eta squared	Test power
Total QOL score	Group	99.728	1	99.728	35.806	<0.001	0.675	1.000
	Before intervention	3986.045	1	3986.045	1430.99	<0.001	0.952	1.000
	Spirituality score	0.585	1	0.585	0.210	0.684	0.120	0.104
	Error	194.986	70	2.786				
	Total	4458.216	74					

## Discussion

The results indicated two dimensions of mental limitations and awareness of QoL significantly increased in the intervention group after a 1-month follow-up of the spiritual care program. Moreover, the total score of QoL significantly increased after finishing a 1-month follow-up of the spiritual care program in the intervention group, compared to the control group. Results of a study performed on the effect of the spiritual intervention on QoL with cardiovascular diseases indicated that spiritual intervention promoted the total score of QoL in adult patients (32). The aforementioned study was performed only on one group and the spiritual intervention was done based on spirituality score for each patient. The present study was conducted on two groups and the spiritual care program was equally performed for the intervention group without estimating the spirituality score.

According to another study, spiritual intervention based on "Tavasol Pray" significantly improved QoL and mental status of patients with a permanent pacemaker (19). Although the results of the aforementioned study are consistent with those of the present study, the method of increasing QoL in the present study was presented as prayer therapy and music therapy as well as listening to the sound of nature via CD. Results of the study in 2020 indicated that spirituality therapy had promoted QoL in

elders with acute coronary arteries (33). The difference is that the above-mentioned study assessed the effect of spirituality therapy on QoL in elders with acute coronary arteries; however, the present study evaluated the effect of spiritual care program on QoL in young and elder HF patients.

Theory of Ghalbe Salim stated that spiritual intervention increased the QoL of patients with acute myocardial infarction (34). Another study performed in 2018 revealed that group spirituality therapy had promoted QoL and spiritual health of patients with MS in Ahvaz, Iran (20). Results of the study indicated that spirituality therapy had promoted QoL in women with breast cancer in Tehran (21). The discrepancy is that these two studies have been conducted on MS and breast cancer and the QoL of HF patients which is severely damaged more than any other chronic disease is neglected.

Regarding the dimensions of QoL, according to the study of Delaney, psychological dimensions and physical health was statistically significant in patients with cardiovascular diseases after 1 month of spirituality therapy intervention. However, there was no statistical change in two aspects of social and family relationships (32). The spirituality-based intervention consisted of music/imagery sessions using CDs. Participants were instructed to listen to the CD at least three times per week for four weeks. The present study improved the mental aspect of QoL which is consistent with Delaney's study and failed to change the physical dimension which is inconsistent with that of Delaney.

Heravi indicated that spiritual care promoted aspects of physical health, social relationships, and mental health of QoL in patients with acute myocardial infarction in the intervention group after the 1-month intervention. However, the difference between the two dimensions of mental health and social relations was statistically significant (33). The results of a study showed that spirituality therapy improved the physical and mental dimension of QoL in patients with MS in Ahvaz. The intervention included five 60-min face-to-face sessions (20).

Another study investigated the results of the effectiveness of spiritual therapy on QoL of women with breast cancer in which the aspects of mental and physical health and social relations were statistically significant, however, the aspect of living environment was not significant (21). The intervention included twelve 60-min face-to-face sessions. The above-mentioned results are consistent with those of the present study in terms of improving the mental aspect of QoL, however, differ from them in other aspects which may have different reasons, such as type of research community, duration of intervention, and cultural-religious beliefs. The limitation of this study was that educational sessions were not held face to face due to stress and high mortality of COVID-19, and the completion of questionnaires by phone calls after 1-month follow-up, and the lack of enough collaboration or organization to implement the sessions.

### **Implications for Practice**

According to the results, spiritual care programs increased the total score of QoL in the intervention group. Therefore, a spiritual care program is suggested as a comprehensive care approach in improving the QoL of chronic diseases, especially HF patients.

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### **Conflict of Interest**

The authors declare that there is no conflict of interest regarding the publication of the present study.

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