



Research Article

Investigating the Effect of Stress Management Skills Training On Perceived Stress of Family Caregivers of Patients with Heart Failure: A Semi-Experimental Study

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Abstract

Introduction and Objectives: Heart failure affects not only patients' lives but also caregivers who are considered as the most important source of care for patients and the health care system.

Perceived stress, especially during exacerbations period of disease increased. Furthermore, training the stress management skills increases the ability of individuals to reduce stress and adapt to stressful situations; so this study is conducted with the purpose of determining the effect of training stress management skills on perceived stress of family caregivers of patients with heart failure.

Materials and methods: This semi-experimental study (before and after) was conducted on 30 patients with congestive heart failure. The sampling was done by access method. Patients were classified into intervention and control groups. Data were collected using Kuhn's Perceived Stress Questionnaire completed before and after the intervention. Data were analyzed by SPSS software version 21.

Results: The results of the statistical tests showed that there was no significant relationship between the two groups before intervention, but after the intervention, the mean score of perceived stress in the intervention group decreased from 38.46 to 21.53. In the control group, this mean was changed from 37.20 to 35.00, and these changes in the intervention group were statistically significant ($p=0.001$).

Conclusion: the training of stress management skills can be effective through improving self-management ability to reduce perceived stress in caregivers of patients with heart failure. Therefore, it is recommended that this training be considered by the authorities in educational centers.

Keywords

Stress management; Perceived stress; Family caregivers; Cardiac failure

Introduction

Chronic heart failure today is one of the health problems in the world, and there are more than 38 million people in the world with chronic heart failure (Ziaean and Fonarow, 2016). It is forecasted that the treatment cost for chronic heart failure from 20.9 million dollar will reach in 2012 will reach to more than 53.1 million dollar in 2030 [1].

The American Heart Association has defined the chronic heart failure as "a complex clinical syndrome that can result from any structural or functional cardiac disorder that impairs the ability of the ventricle to fill or eject blood [2].

More than 80% of heart disease, including chronic heart failure, occurs in the Eastern Mediterranean region, including Iran [1,3]. The incidence of chronic heart failure has reported 3337 per 100,000 people in Iran [4].

Cardiovascular failure by creating various physical and mental stressful factors such as pain, lack of health, job loss, sensory deprivation, impending death, and varying degrees of psychological reactions such as hopelessness, fatigue, and panic, resulting in invaluable feeling and reduced trust of patient. [5-9].

Cardiac failure affects not only the patient but also family caregivers; and is considered the most important source of care for patients and the health care system. Since these patients have different food and drug diets and on the other hand, due to the chronic nature of the disease they deal with this disease life-long [10-12] the different factors such as long-term care, high costs, and burden of this disease cause fatigue and stress of family caregivers [13,14].

According to the different studies, this disease causes the decrease in quality of life, depression [15,16], and increased induced stress [17]. In addition, excessive stress in these patients leads to psychological disorders. Perceived stress is one of the explaining components of the probability of adopting coping styles by individuals in stressful situations and it refers to the individual's belief regarding the severity of stress [18].

Since a wide range of behaviors may affect stress, learning required skills and training have led to control perceived stress in various patients, such as those with AIDS [19] as well as adolescents [20]. Therefore, the recent changes in world health care systems requires patients with long-term and complex care needs be monitored at home and by family members, particularly, changes in clinical medicine have led to shorten hospitalization period and following-up the patient in community, especially home-based care, which is cost-effective for both the patient and the hospital [12].

Since in our country, family caregivers are considered as essential components of community health services [21], and as caregivers are a group that physically and mentally are vulnerable, if their problems are not resolved, this source of care will suffer physical and emotional exhaustion and lose its effectiveness in caring activities [22].

If these people be left without treatment and intervention, their physical and mental health as a hidden patient decreases. In addition, given the importance of training stress management programs about the general health of cardiac patients, this study aims to determine the effect of training stress management skills on perceived stress of family caregivers of the patients with heart failure.

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Method

Study design and location

The present study was conducted in a semi experimental, non-experimental in form of pre-and post-test study on 30 people from family caregivers of patients with heart failure in 3 CCU cardiac care units at Zabol Amir Al-Momenin Hospital from April to September 2017. This study was approved by the Ethics Committee of Zabol University of Medical Sciences (code Zbmu.1.REC.1396.114). The sampling was done by access method.

Patients were classified randomly into two groups: intervention (N=15) and control (N=15). Based on the inclusion criteria, a member of the family was selected as a caregiver who had the most and closest contact with the patient in the family; moreover was responsible for psychosocial, social, financial support, and patient's health plan. The other person's particulars for inclusion to the study were as follows:

Having at least 15 years old, being able to make relationship with the other [23], having reading and writing skills, having heart failure based on doctor's diagnosis, doing echocardiography for the patient, participating of patients in class with grade two and more, under care patient with heart failure, lack of previous participation of caregiver in any formal education program of self-management and experiencing no event or sudden stressful living conditions during the past 6 months. Exclusion criteria included suffering from mental illness, chronic disease, physical disability and simultaneous care of another patient [24].

Intervention and review

study objectives and the method of doing it, as well as assurances to the research units about the confidentiality of the information was explained to a researcher assistant who was trained after consulting the section in the rest room. At the end, patients were asked to participate in the research if they wished. Patients who were willing to participate in form of in access presented oral and written consent. Among the selected patients, 30 individuals were randomly classified into two intervention groups (stress management skills training) and control group (the individual was under no training and only talked about his/her problems). Perceived stress was measured before beginning the intervention in two groups by a questionnaire. Then, stress management skills training sessions were held by qualified psychologists (having academic education, teaching and clinical background) during eight weekly sessions and for of two months. The presented topics in each session of practical guide for stress management in a cognitive-behavioral manner were selected based on relevant texts [25,26].

The presented topics at each session were as follows:

First session: introduction, stress causes and response to stress, second Session: relationship between thoughts and emotions, third session: understanding irrational thoughts, fourth session: anger management, fifth session: training the technique of problem solving, sixth session: exercise expression and communication skills training, seventh session: time management, and eighth session: general review and practicing the learned skills. Of course, the number of sessions for each topic increased, if necessary. At each session, the psychologist first reviewed a content summary of previous sessions, and patients presented a report on the offered homework of previous meeting. Then, the psychologist expressed the purpose of the meeting and trained the patients the new skills, and gave homework for doing at

the interval time between the sessions. The caregivers were obliged to perform the given homework practically in the interval time between the sessions and report about it in the next meeting. After the end of the intervention program in the intervention group, the facilitator was assured about the learning of trained items using a checklist; and immediately after completing the training, asked each person to fill out the perceived stress questionnaire again.

Tool

Demographic characteristics questionnaire: This self-made questionnaire consists of 11 questions for collecting personal information including gender, age, place of residence, marital status, educational level, employment status, monthly income, home mate, type of dependency, average hours of daily care, years of care.

Cohen's Perceived Stress Questionnaire [27] includes 14 questions examining the amount of thoughts and feelings of people over the past month. The mode of scoring a questionnaire based on a Likert's 5-degree scale is in form of never (0), almost never (1), sometimes (2), often (3) and most of the time (4). The items of 4,5,6,7,9,10 and 13 have scored reversely; and include from 4 for never to 0 for most of the time. The minimum obtained score is zero and the maximum score is 56. The cut point is 21.8 and the higher obtained score showed more perceived stress. Content validity of this questionnaire was verified by 10 professors of Mashhad University of Medical Sciences. The validity and reliability of this tool have been confirmed in Persian language by Cronbach's Alpha 0.74 [28].

Data analysis

SPSS 21 software was used to analyze the data. T-paired and t-independent were used to examine the relationship between variables.

Results

Demographic characteristics

The mean age of the patients in the intervention and control groups was 35.20 ± 12.7 and 36.66 ± 10.49 , respectively. Mean and standard deviation of day care in intervention and control groups were 5.73 ± 1.90 and 4.80 ± 1.42 , respectively. Most participants in the two groups were women, married, residents of the city, housewife and had diploma education degree (Table 1).

Main obtained results

The results of Shapiro-wilk's statistical test showed that perceived stress in the two interventions and control groups before and after the intervention followed the normal distribution.

Regarding the intergroup changes, the results of independent t-test before the start of intervention indicated that the mean of perceived stress scores in the intervention and control groups has no statistically significant different in terms of mean ($P=0.462$). Regarding the intra-group changes after intervention (stress management skills training), t-test results showed a significant difference between the mean scores of perceived stress in two intervention and control groups ($P=0.001$). Although in the control group, the perceived stress score had no significant change at the end of the study ($P=0.236$) (Table 2).

Discussion

The results of present study indicated the effectiveness of training stress management skills on perceived stress among family caregivers

Table 1: Comparison of frequency distribution of patients with heart failure in terms of demographic information in two groups before intervention.

Demographic characteristics		Intervention group		Control group		P value	Type of Test
		N	%	N	%		
Gender	Female	10	66/7%	12	80%	0/680	Fisher's exact test
	Male	5	33/3%	3	20%		
Marital Status	Single	6	%40	3	%20	550/0	Fisher's exact test
	Married	8	%3/53	9	%60		
	Divorced	0	%0	1	%7/6		
	widow	1	%7/6	2	%3/13		
Residence	Urban	10	%7/66	7	%7/46	220/1	Chi square
	Rural	5	%3/33	8	%3/53		
Education	Only reading	2	%3/13	5	%3/33	650/0	Fisher's exact test
	Preliminary	3	%20	2	%3/13		
	Guidance	2	%3/13	2	%3/13		
	Diploma and higher	8	%3/53	6	%40		
Employment Status	Employer	3	%20	3	%20	000/1	Fisher's exact test
	Free work	2	%3/13	3	%20		
	Housekeeper	10	%7/66	9	%60		

Table 2: Comparison of the perceived stress mean scores of caregivers of patients with heart failure in both groups before and after intervention.

Group	Perceived stress	Invention	Control	Intergroup changes	
		Average(standard deviation)	Average(standard deviation)	P- Value	Type of test
Before		38.46 (4.59)	37.20(4.71)	0.462	In dependent t-test
After		21.53(2.79)	35.00(8.29)	P<0/001	In dependent t-test
Intergroup changes	P- Value	P<0/001	0.236		
	Test	dependent t-test	dependent t-test		

of the patients with heart failure. According to the results, before the intervention, the perceived stress level of caregivers of patients with heart failure was 37.93 (above the cut-off point), it may indicate their dealing with multiple problems associated with caring for the heart failure patients. In confirmation of this matter, Lacerda et al. [29] write: direct and indirect care of patients with heart failure may lead to inducing stress in the patients' family.

According to a study conducted by Robley et al. [30], it has been confirmed that the caregiver family of under the open heart surgery patients are dealing with stress; and its expressed is in format of anger. In addition, Ghaedi et al. [31] by conducting a study found that family caregivers of candidates for coronary artery surgery experience high stress.

All of these results are consistent with the present study. Regarding the underlying cause of this stress, Douglas believes that families think about the costs of hospital, medical equipment, medicines, diagnostic, and health care services. Accordingly, the illness in the family is considered as a critics and event causing anxiety in patient's family [32].

Hiremath et al. [33] also consider caregivers as the first available source for supporting the patients who experience a feeling of exhaustion and lack of physical and mental well-being, changes in economic conditions, personal and social communication.

In this study, the changes in mean of perceived stress score before and after intervention in both intervention and control groups, as well as the difference in mean of these scores in the intervention group who were trained under stress management skills, with the control group who receive no any training showed the reduction of perceived stress in the intervention group. In addition, it suggested that getting

skills in stress management by caregivers of patients with heart failure reduces their perceived stress.

Habibi et al. [34] point out that stress management can have a useful role in reducing anxiety, stress and depression. The researcher found no any study similar to the present study in the various databases.

Mansouri et al. [35] at the end of their study entitled «Investigating the Effect of Communication Skills Training on Perceived Stress in Caregivers of Elderly with Alzheimer», suggested that one month after intervention, the mean perceived stress score of caregivers in the test group compared with the control group has had significant reduction. This result, despite having difference in the studied population in terms of the effect of communication skills training as a stress management component of the perceived stress of caregivers has consistent with the result of present study. In this part, it is pointed out. The effect of training on the mental state of caregivers in some other studies has been investigated as well; including Zafarian et al. [36] have considered the impact of spiritual-religious training. The present study like any other studies deals with constraint such as shortage of volume of sample. With regard to the mentioned limitations, it is proposed that the larger volume of samples is used in future studies.

Conclusion

Based on the findings of this study, the intervention of stress management skills training can be effective in managing the family caregivers of patients with heart failure in a case study from Iranian society. In addition, these results are in consistent with the obtained results of the other studies and suggest that prediction and providing the patient and their caregivers with such educational services in the system of health services provision is helpful and effective.

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