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Original Article

Comparing the effectiveness of mindfulness-based stress reduction therapy and an Islam-based spirituality therapy on quality of life in hypertensive cardiac patients

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Abstract

Background and aims: This study aimed to compare the effect of the mindfulness-based stress reduction (MBSR) with cognitive approach, with that of the spiritual therapy with Islamic approach on quality of life among hypertensive cardiac patients.

Methods: All cardiovascular patients referred to the cohort center in Shahrekord in 2019 were included in this semi-experimental (pretest-posttest design) study. Using convenience sampling method, 75 patients were selected and randomly divided into two experimental groups and one control group in such a way that each group included 25 individuals. The McNew quality of life questionnaire was used to collect the required data. All groups received standard medical drugs under the supervision of a cardiologist. In addition to standard medical treatment, the experimental groups underwent MBSR with a cognitive approach (8 sessions lasting 90 minutes) and spiritual therapy based on Islam (8 sessions lasting 90 minutes); The control group received no non-medical intervention. Data were analyzed by using AVOVA and paired *t* test.

Results: The overall score of quality of life in the MBSR and spiritual therapy groups increased significantly after the intervention ($P<0.001$). As for the control group, however, the overall score of quality of life remained unchanged after the intervention ($P=0.10$). Significant differences were observed in the total scores of quality of life among the three groups so that the mean score of the difference in the total score of quality of life in the spiritual therapy group before and after the intervention was higher than those in other groups ($P<0.001$).

Conclusion: MBSR therapy and specially Islam-based spiritual therapy had the potential to improve the quality of life in hypertensive cardiac patients.

Keywords: Mindfulness-based stress reduction, Cognitive behavior therapy, Quality of life, Cardiovascular disease, Islam-based spiritual therapy

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Introduction

Despite the decline in mortality from cardiovascular diseases over the past decade, these diseases, much more common in people aged over 35, are the leading cause of death or disability in developed and developing countries (1,2). Arteriosclerosis is a lifestyle-related disease, and is associated with poor health habits. Researchers have identified several factors that may play roles in increasing the risk of atherosclerosis. Psychological factors such as stress, depression, and social isolation as well as behavioral factors such as diet, exercise, weight control, and adherence to prescribed drugs affect the growth of atherosclerotic plaques throughout the course of the disease (3). In addition, high blood pressure is the most important public health issue in various countries, which is common, asymptomatic, and often undetectable and, if left untreated, can lead to fatal complications. In fact, the label 'silent killer' has been attached to primary hypertension because it lacks the detectable symptoms and unpleasant complications of cardiovascular disease, which can occur if the disease is left untreated. Since chronic coronary artery disease is a debilitating and progressive disease and various external as well as internal factors contribute to its severity or improvement, developing a definitive treatment for the disease is essentially an unattainable goal (4). These complications negatively affect the quality of life of patients and paying attention to the quality of life of cardiac patients is one of the main goals in the treatment and care of these patients (5). Measuring the patients' quality of life is not only a tool for evaluating the effectiveness of therapeutic interventions but also a way to analyze the cost-effectiveness of the given interventions (6). Quality of life, in general, includes physical health, psychological status, level of independence, social relationships, and personal beliefs, and the relationship between these factors and environmental characteristics (7). In chronic patients, the quality of life is affected by the severity and duration of the disease and, therefore,

they take medications to overcome them; patients with cardiovascular disease present no exception to this general approach (8-10). The complications of cardiovascular disease, in addition to causing physical discomfort, place psychological, social, and economic burdens on patients and their families (8,9,11).

Several therapeutic methods have been developed to deal with people with chronic diseases. One of the most effective, therapeutic methods is mindfulness-based stress reduction (MBSR) therapy with a cognitive approach. The MBSR therapy was originally developed to treat patients suffering from chronic pain; after evaluating the clinical outcomes produced by this method, however, it was later found that it was also effective in reducing stress and physical stress-related stress in addicted people, cancer patients, and other physical illnesses (12). MBSR therapy focuses on several components: avoiding judgment, raising awareness, focusing on the present moment, as well as helping people process their cognitive, physiological, and behavioral activities. Moment-by-moment awareness of thoughts, feelings, and physical states leads people toward learning, controlling themselves, and freeing themselves from spontaneous thoughts (13). Another approach adopted to improve mental health, reduce psychological stress, and increase resilience in patients with chronic diseases is Islam-based spiritual therapy. The spiritual therapy, in addition to creating coherence and integration in biological, psychological, and social dimensions, emphasizes the importance of spiritual dimension for the patients. Psychologists argue that spirituality, religious and moral beliefs, as well as values play important roles in maintaining physical and mental health and nourishing the soul (14,15). In general, the issue of cardiovascular disease has become doubly important in psychology – health psychology, in particular – and the results from several studies have suggested that people with cardiovascular disease experience extremely severe psychological problems (16,17). Furthermore, some studies have shown that providing people with necessary training produces a positive effect on physical skills and, finally, on the quality of life (18,19). Therefore, the present study aimed to compare the effect of MBSR therapy with a cognitive approach, with that of Islam-based spiritual therapy on the quality of life in hypertensive cardiac patients.

Materials and Methods

In the present experimental study, a pretest-posttest design with a control group was adopted. The study population included all cardiac patients referred to the Shahrekord Cohort Center in 2019 and examined by a cardiologist. From among all included patients, 75 ones were selected following the convenience sampling method. In similar experimental studies, at least 12 samples are included in each group to reach the standard sample size and, therefore, a study requires a total of 36 samples to test the hypotheses (20). The statistical power (1–β) was more than 80% and alpha (α) was less than 0.05; therefore, our study sample size was sufficient for fulfilling the study objectives (20). In experimental studies where the size of the population is not known due to the type of sampling, it is not possible to determine the sample size using the formula; however, a credible research (21) has suggested that volume selection of the sample leads to test power and high effect on results. It can indicate the adequacy of the sample size. Patients were randomly divided into two experimental groups and one control group by using random number table. Finally, 57 patients were divided into case and control groups (Figure 1).

It should be noted that informed written consent was obtained from patients. Inclusion criteria in the present study included fulfilling the necessary criteria for cardiovascular disease by a cardiologist, obtaining a score lower than the average in response to the questionnaire on quality of life, attending treatment sessions held for included patients, not suffering from mental illnesses and undergoing psychotherapy in the past 6 months, not having history of taking psychiatric medications, believing in God, falling within the 25-65 age range, holding at least a high school diploma for being eligible to attend the training sessions and do the practices, and expressing satisfaction with participation in the study. Exclusion criteria included the absences from the sessions for more than two consecutive sessions or three non-consecutive sessions as well as withdrawing from the study.

All experimental samples of metabolic syndrome as well as patients' blood pressure were studied before the intervention; however, laboratory monitoring and blood pressure measurements were performed again after the intervention, so that the blood pressure above 140.90 mm Hg for people under 60 years as well as that above 50.180 mm for people over 60 years were regarded as signs of high blood pressure. Factors that may have contributed to high blood pressure were also provided in a checklist by the cardiologist to exert maximum control, and a clinical examination was performed by a physician to check the blood pressure.

After selecting the eligible samples, the pre-test was performed under the same conditions, the samples were randomly assigned to the intervention and control groups (25 ones in each group), and all groups received the same standard medication under the supervision of a cardiologist. In addition to standard medical treatment, the first experimental group underwent MBSR therapy with a cognitive approach. The second experimental group, on the other hand, underwent Islamic-based spiritual therapy. However, the control group received no training. After holding the training sessions for a month, experimental and control groups received the same post-test. After collecting pre-test and post-test data, they were analyzed using appropriate statistical methods. Appropriate treatment sessions were attended by the control group adhering to ethical principles after training sessions attended by experimental groups and post-test sessions attended by the experimental and

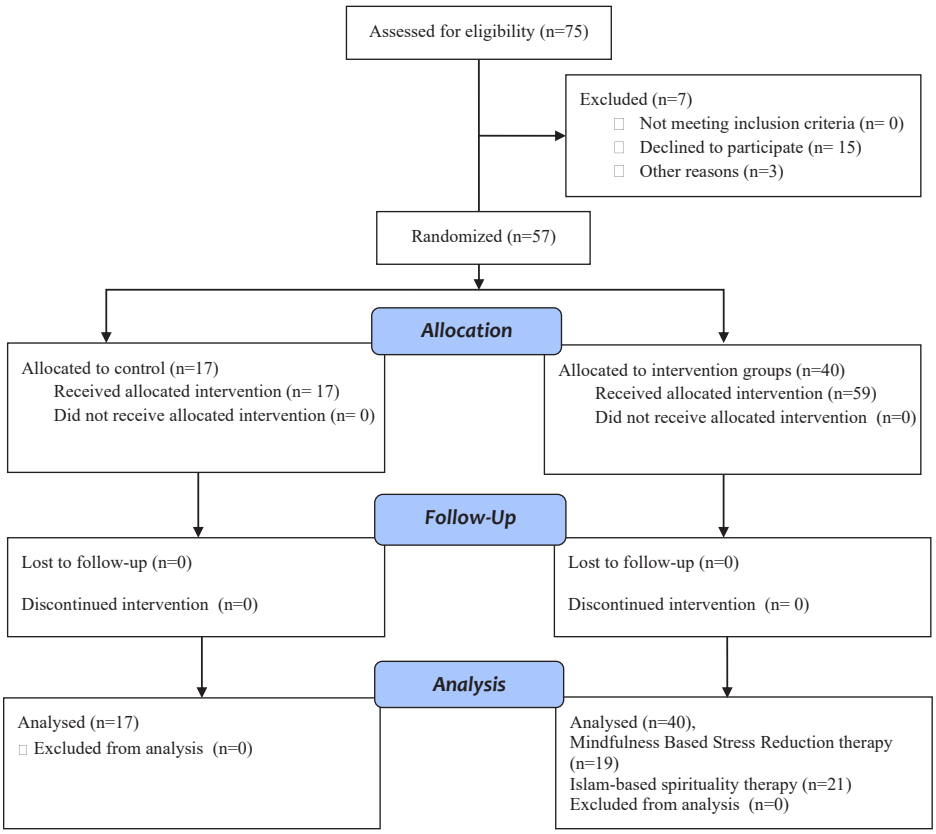

Figure 1. CONSORT flow diagram of the study population.

control groups. After selecting the eligible samples and randomly assigning them to the intervention and control groups (25 samples in each group), all groups received the same standard medication under the supervision of a cardiologist. In addition to standard medical treatment, the first intervention group recieved MBSR therapy with a cognitive approach. After the training sessions, the intervention and control groups were tested under the same conditions. The following tools were used to collect data:

1. Quality of Life Questionnaire: The McNew Quality of Life Questionnaire for Cardiac Patients is a valuable tool for measuring and evaluating the quality of life in cardiovascular patients. The questionnaire which includes 27 items addresses the way the heart disease – coronary heart disease, in particular – and its treatment affects the patient's physical, emotional, and social activities (22).

The questionnaire's items cover three different subject areas including emotional performance, physical performance, and social performance; to be more precise, 14 items address emotional performance, 14 items address physical performance, and 13 items address social performance. Five items concerning physical performance assess the symptoms of the disease, which include chest pain, shortness of breath, fatigue, dizziness, and leg pain. The validity and reliability of this questionnaire are more acceptable compared to those of other tools. Khayyam-Nekouei et al standardized this questionnaire for cardiac patients in Isfahan province in 2005, and determined its reliability as to be 94% based on Cronbach's alpha coefficient (22). In the present study, Cronbach's alpha was used to investigate the internal consistency of the questionnaire, which was obtained at 0.83.

2. The content of MBSR sessions with a cognitive approach: According to the protocol developed by Kabat-Zinn, the content of sessions of MBSR therapy with a cognitive approach (23) throughout eight 90-minutes weekly sessions lasted for 8 weeks (Table 1).

3. Content of Islamic-based spiritual therapy sessions: In order to carry out the Islam-based spiritual therapy protocol, the program and protocol of Kajbaf et al (24) were used in eight 90-minute sessions. The protocol was approved by 5 professors of Isfahan University in terms of the content. The summary of the sessions is shown in Table 2.

After collecting pretest and posttest data, the data were analyzed by AVOVA and paired *t* test. The significance level in this study was set at 0.05.

Results

The demographic characteristics of the subjects in all three groups are presented in Table 3.

As for comparing the age and sex of the subjects in experimental and control groups, ANOVA test for age ($F=0.45$, $P=0.64$) and chi-square for sex (chi-square = 1.99, $P=0.37$) were used. There was no significant difference between age and sex in the three groups.

Table 4 shows the mean and standard deviation of pretest regarding quality of life in the intervention and control groups.

Table 1. Summary of sessions of mindfulness-based stress reduction therapy with a cognitive approach

Session no.	Session description
First	Introduction to and familiarity with heart disease; risk factors; the effect of stress on heart disease, blood pressure, blood sugar, and fat; training meditation and body examination.
Second	Continuation of examining the body's emotions; teaching meditation with awareness of breathing; exercise and meditation as homework.
Third	Soft mind yoga exercises to relieve global symptoms of stress and become aware of precise and delicate body movements; pregnancy exercises including checking physical feelings; soft yoga.
Fourth	Teaching and practicing meditation with an emphasis on the perception of physical feelings; home practice including soft yoga, meditation for a long time, awareness of stress knowledge.
Fifth	Sitting Meditation Practice Emphasizing stress and how to deal with it in certain situations; home exercise; continuing to check physical feelings; soft yoga; meditation.
Sixth	Physical Meditation; Continuing Examination of Physical Emotions; Soft Yoga; Meditation.
Seventh	Talking as well as doing more physical exercise; stress and communication as well as using MBSR on a daily basis; home exercise including checking physical feelings; soft yoga; meditation.
Eighth	Overview of sessions; continuation of practice; meditating and practicing unconscious awareness; emphasizing the continuation of practice after sessions; getting feedback from participants about the mind, awareness, and planned exercises.

Table 2. Summary of Islamic-based spiritual therapy sessions

Session no.	Session description
1	Familiarity with and raising generalities; administration of the questionnaire; definition of spiritual therapy with Islamic approach; determining assignments.
2	Assessing the task of advanced muscle relaxation training with divine remembrance and illustration; determining assignments.
3	Assessing assignments; spiritual self-examination; inquiring about beliefs concerning the lives of religious leaders; determining assignments.
4	Assessing assignments; introducing attention and accepting one's weaknesses; highlighting the importance of believing in perfectionism, and the relationship between perfectionism and attention; determining assignments.
5	Assessing assignments; introducing destiny; appreciation and prudence; encouraging the client to set important goals and values for life; determining assignment.
6	Assessing assignments; providing correct beliefs in the practical modeling of the lives of spiritual elders; teaching appreciation; practicing forgiveness; determining assignments.
7	Assessing assignments; teaching writing spiritual letters; teaching recording spiritual events; practicing; determining assignments.
8	Assessing assignments; providing solutions for maintaining and applying methods in daily life; presenting brochures and booklets containing summaries of educational materials.

Table 3. The demographic characteristics of studied groups

Groups	Mean age		Gender, No. (%)	
	Men	Women	Male	Female
Mindfulness based stress reduction therapy	42.38	38.52	13 (52)	12 (48)
Islam-based spirituality therapy	39.62	43.74	11 (44)	14 (56)
Control	40.20	42.31	15 (60)	10 (40)

According to the Table 4, the score of physical function was significantly increased in the MBSR and spiritual therapy groups after the intervention; however, the score of physical function was decreased in the control group after the intervention ($P=0.022$). Moreover, significant differences were observed among the three groups regarding the scores of physical functions, so that the mean score of the difference in physical function in the spiritual therapy group before and after the intervention was higher than those in other groups ($P<0.001$). The emotional performance scores in the spiritual therapy group and control group were significantly increased after the intervention, but the emotional performance score in the MBSR group remained unchanged after the intervention ($P=0.087$). Emotional performance scores in three groups were significantly different, so that the mean score of emotional function difference in the spiritual therapy group before and after the intervention was higher than those in other groups ($P<0.001$). The scores of social performances in all three groups, namely MBSR, spiritual therapy, and control were significantly increased after the intervention. Significant differences were observed among three groups regarding the mean scores of social performance difference before and after the intervention, so that the score was higher in spiritual therapy group compared to scores in other groups ($P<0.001$). Finally, the overall scores of quality of life in the MBSR and spiritual therapy groups increased significantly after the intervention ($P<0.001$), but the overall score of quality of life in control group continued unchanged after the intervention ($P=0.10$). Significant differences were observed among the three groups regarding the total score of quality of life, so that the mean score of the difference in the total score of quality of life for the spiritual therapy group before and after the intervention was higher than those for other groups ($P<0.001$).

Discussion

This study aimed to compare the effect of MBSR therapy with a cognitive approach, with that of Islam-based spiritual therapy on quality of life among hypertensive

Table 4. Mean and standard deviation of the dependent variable in the experimental and control groups at pretest and posttest

Variables	Mindfulness based stress reduction therapy	Islam-based spirituality therapy	Control	*P* value (ANOVA)
	Mean ± SD	Mean ± SD	Mean ± SD	
Physical function				
Pre-test	40.84 ± 6.84	39.85 ± 5.60	42.17 ± 6.98	0.549
Post-test	42.52 ± 8.05	43.74 ± 5.49	41.23 ± 6.87	0.535
P value (Paired *t* test)	0.002*	0.000*	0.022*	
Mean difference	1.68 ± 4.06	3.88 ± 3.00	-0.94 ± 1.52	0.000*
Emotional performance				
Pre-test	39.31 ± 6.60	38.42 ± 6.18	40.23 ± 7.24	0.708
Post-test	43.52 ± 8.05	44.69 ± 5.46	41.60 ± 6.68	0.381
P value	0.087	0.000*	0.001*	
Mean difference	4.21 ± 4.19	6.26 ± 3.12	1.37 ± 1.46	0.000*
Social performance				
Pre-test	34.21 ± 6.51	33.38 ± 6.19	35.23 ± 7.07	0.690
Post-test	38.52 ± 8.05	39.65 ± 5.43	36.76 ± 6.78	0.433
P value	0.000*	0.000*	0.000*	
Mean difference	4.31 ± 3.54	6.26 ± 3.06	1.52 ± 1.38	0.000*
Quality of life				
Pre-test	114.52 ± 20.19	111.85 ± 17.81	117.23 ± 21.65	0.708
Post-test	124.57 ± 24.17	128.09 ± 16.38	119.00 ± 20.13	0.396
P value	0.000*	0.000*	0.10	
Mean difference	10.05 ± 11.78	16.23 ± 8.49	1.76 ± 4.16	0.000*

*Significant ($P<0.05$).

cardiac patients. According to our study findings, both MBSR therapy with a cognitive approach and Islam-based spiritual therapy were effective in increasing the quality of life among cardiac patients with hypertension. The results also revealed significant differences among the three groups regarding the total scores of quality of life, so that the mean score of the difference in the total score of quality of life in the spiritual therapy group before and after the intervention was higher than those in other groups. Taking into account the first finding, it was detected that MBSR therapy with a cognitive approach was effective in increasing the quality of life in hypertensive cardiac patients. This finding was consistent with the results from other studies (25-27). By way of explanation for this finding, increasing spirituality is related to awareness and a sense of connection with the transcendent in daily life, and this is not only one of the most important outcomes of mindful meditation exercises but also one of the key mechanisms through which MBSR improves mental health. In summary, patients with chronic diseases, such as heart disease, can get mindfulness exercises in a variety of ways. The goal of this treatment is to control the reaction to distressing feelings and thoughts along with experiencing a pain (28). Mindfulness increases physical self-control and body alertness, which is likely to improve self-care. Similar to traditional relaxation training, mindfulness meditation is associated with increased parasympathetic activation, which can lead to deep muscle relaxation, stress and arousal reduction, pain reduction and, ultimately, quality of life improvement (26).

Our results also demonstrated that Islam-based spiritual therapy was effective in increasing the quality of life among hypertensive cardiac patients. This finding was in line with the results from other studies (29-31). By way of explanation for this finding, the spiritual and religious strategies have a great impact on improving the quality of life, which in turn increases the mental health and boosts the performance of daily tasks. Patients who are more hopeful about life look at others as supportive sources and bases on which they can rely. Spirituality makes patients more flexible when they face challenges in life (32). People with a better mental state are less likely to experience internal conflicts, aimlessness, emptiness, despair, dissatisfaction, frustration with crises, and endure deprivation and adversity (33). In sum, religious beliefs and practices have a positive effect on the prevention of physical and mental illnesses as well as the recovery from them, and increase the quality of life. Furthermore, having spiritual beliefs positively contributes to the prediction of physical and mental health (34). As for people who use spiritual mechanisms, their immune systems function more efficiently and they adopt more effective strategies to cope with problems (e.g., reassessment and problem solving strategies) and, ultimately, enjoy a higher quality of life (35). Another finding of the present study was the fact that there was no significant difference between the effect of MBSR therapy with the cognitive approach and that of the Islam-based spiritual therapy on quality of life. Given

that mindfulness-based therapies address both physical and mental dimensions, the improvement in the quality of life in the intervention group was expected. Mindfulness helps people to cope with stress, pain, and illness more effectively. This method increases the state of mindfulness in individuals, which in turn improves their performance by reducing mental rumination and emotional avoidance as well as by increasing self-regulatory behaviors (36). In sum, improving quality of life positively contributes to the improved mastery of the environment, purposefulness and orientation in life, self-acceptance, personality development, positive communication with others, as well as independence (37) thereby the power of transcendence increases. Material and physical appearances bring this forth, which enables a person to understand the deep meanings of the world of creation, as well as him/herself, along with covering the semantic void (38).

Spiritual education is one of the most useful approaches by which people can prevent physical, mental, and social diseases; moreover, people can tap into divine power and eternal, infinite source by believing in religion and performing prayer in order to find hope and peace.

Attending religious ceremonies, regardless of being a religious duty, has important social-psychological functions, which form a kind of healthy emotional connection among people in the community. Therefore, the findings of this study may have been used to improve the quality of life for cardiovascular patients (39). Spirituality is associated with mental and physical health, sense of well-being, and recovery. Daily spiritual practices, religious support, and religious-spiritual self-assessment in life can predict mental health, physical health, and well-being. Thus, poor mental health in individuals is associated with a sense of stress, anxiety, depression, and loneliness (15). It is worthy of mentioning that the lack of a follow-up after three months from the last evaluation was a limitation of this study.

Conclusion

The Mindfulness Based Stress Reduction therapy and particularly the Islam-based spirituality therapy had the potential to improve the quality of life in hypertensive cardiac patients. According to our study results, it was recommended that the MBSR therapy with the cognitive approach and particularly the Islam-based spiritual therapy be given to patients with hypertension and other patients with chronic diseases in medical centers. It was also suggested that similar researches be conducted in other cultures and societies in order for facilitating the generalization of our study results.

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Conflict of Interests

The authors declare that they have no conflict of interests.

Ethical Approval

The study protocol was approved by ethic committee of Karaj Branch, Islamic Azad University with code IRIAU.K.REC.1398.077.

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