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Comparison of the Effectiveness of Mindfulness-based Stress Reduction Training and Positive Psychology Intervention in Hostility and Physiological Indicators among Cardiovascular Patients

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Abstract

Background: There is ample evidence that cardiovascular diseases bring about many physical, psychological, emotional, and psychological consequences.

Objectives: The present study aimed to compare the effectiveness of mindfulness-based stress reduction (MBSR) training with positive psychology in hostility and physiological parameters among cardiovascular patients.

Methods: This quasi-experimental study was conducted based on a pre-test post-test control group design. The statistical population included cardiovascular patients referred to cardiology centers in Tehran in the first six months of 2020. The sample consisted of 45 patients who were purposefully selected and randomly assigned to two experimental groups and one control group (n=15 in each group). Participants completed a hostility questionnaire before and after the intervention (Radford, 1990). The two experimental groups received the MBSR training program with positive psychology in eight 90-min weekly sessions, while the control group did not receive any training. To test the hypotheses, ANCOVA and MANCOVA analysis were used, along with the least significant difference (LSD) post hoc test.

Results: Based on the results, both methods of MBSR training and positive psychology had a significant effect on hostility and physiological indicators (pulse and blood pressure) in the experimental groups, compared to those obtained in the control group ($P<0.001$) in the post-test; nonetheless, no significant difference was observed between the two approaches ($P>0.05$).

Conclusion: As evidenced by the results of the current study, the MBSR intervention and positive psychology can be suggested as effective methods for the enhancement of general health and lifestyle and the mitigation of hostility among cardiovascular patients.

Keywords: Hostility, Mindfulness, Stress, Positive psychology, Cardiovascular diseases

1. Background

Today, cardiovascular diseases pose a heavy burden to the health system in different countries (1). These diseases disrupt the function of cardiac muscle by decreasing the arterial blood flow (2). In the long run, cardiovascular diseases limit people's lives and reduce a patient's chance of surviving. Hostility is one of the variables that can affect the mental health of patients with cardiovascular diseases (3). It is a psychological construct associated with a number of phenomena, such as aggression, anger, resentment, irritability, suspicion, hatred, distrust, as well as verbal and physical aggression.

Hostility is also defined as a negative attitude or cognitive trait toward others, consisting of resentment, suspicion, and pessimism (4). One of the effective styles that consider hostility is mindfulness-based stress reduction (MBSR) (5). This program is an eight-session intervention method in which participants are taught to non-judgmentally communicate with their inner and outer worlds in the current moment with full attention and awareness. The MBSR is a focused, flexible, and immediate observation of the flow of thoughts, feelings, and physical sensations that presents itself to patients in a state of consciousness.

Another method that has recently attracted the attention of the scientific community is the use of positive psychology to improve mental disorders and problems, such as depression, anxiety, and stress (6). In this approach, which was suggested by Martin Seligman, the positive aspects and strengths of human beings are recognized and promoted, instead of psychological and behavioral deficiencies. Positive psychology helps clients to alleviate the anxiety following a psychological trauma and increases their happiness by giving meaning to life (7). In addition, positive psychology aims to place positive aspects of one's life in the background of his/her mind in order to teach behaviors that seek positive feedback from others (8).

Many researchers have recently turned their focus to the close relationship between mental health and heart diseases. O'Donovan, Neylan, Metzler & Cohen (9) linked high levels of stress to elevated inflammation in cardiovascular patients. Moreover, Mahmoud Alilou et al. demonstrated (10) that psychological well-being is significantly lower in these patients, compared to that in healthy people. In a similar vein, Heidari Pahlavian et al. (11) pointed to a significant relationship between high hostility and coronary artery disease. Since hostility and aggression are closely related to the

incidence and persistence of coronary heart disease, it seems necessary to assess psychological interventions to control and reduce the abovementioned harmful variables in the treatment protocol of coronary artery patients.

Heshmati and Ghorbani (12) indicated that the reduction of mindfulness-based stress by adjusting biological and psychological processes leads to improved physical function and health-related quality of life among people with coronary artery disease. The majority of studies confirm the effectiveness of mindfulness-based interventions in the mitigation of stress, depression, suicidal ideation, anxiety, and negative spontaneous thoughts, as well as the enhancement of quality of life, resilience, and psychological well-being (13). Research has suggested that mindfulness-based stress reduction has no side effects and specific negative consequences, such as fibroids, chronic pain, rheumatoid arthritis, diabetes, chronic fatigue syndrome, cancer, hypertension, AIDS, skin diseases, multiple chemical allergies, and cardiovascular disease. It also brings about positive therapeutic and long-term results regarding the reduction of emotional distress in a variety of chronic diseases (14).

The results of another review study which aimed to investigate the effectiveness of mindfulness in psychological stress and health status of medical patients reported that mindfulness programs reduced stress and increased health status (15). Lyubomirsky and Layous (16) believe that positive psychology interventions reduce depression and increase happiness and psychological well-being by the enhancement of positive emotions and thoughts, as well as the satisfaction of basic needs, such as autonomy, love, belonging, and communication. Bolier et al. (17) reported that such a positive education improves and strengthens trust in God, optimism, self-efficacy, conscientiousness, sense of control, purposefulness, hope, life satisfaction, meaningful life, positive mood, happiness, sociability, self-esteem, sense of worth, peace of mind, gratitude, and forgiveness.

Positive emotions change the mental and behavioral characteristics of human beings towards positive impacts (18, 19). Positive psychology sessions enhance many cognitive functions, such as learning and decision making, and improve social relationships (20). Along the same lines, Uliaszek et al., (21) showed that positive psychotherapy has a positive effect on the reduction of students' psychiatric symptoms. Schrank et al., (22) also found that positive psychology-based training increases psychological well-being and reduces the signs and symptoms of anxiety and depression. In addition, in most studies, the effectiveness of positive interventions has been emphasized both in the promotion of human capabilities, positive emotions, experiences, happiness, quality of life, life satisfaction, as well as the reduction and prevention of the symptoms of disorders (23). Due to the chronicity of heart diseases, it is necessary to help these patients to overcome their problems using appropriate psychological approaches to strengthen individual resources and potentials.

Given the aforementioned issues, there is a bulk of research on the effectiveness of positive psychology or mindfulness therapy; nonetheless, no study has compared these two treatments. Therefore, the results of various studies on the effectiveness and efficacy of mindfulness and positive psychology methods in the reduction of the symptoms of mental disorders raise the following question: which of these two methods is more effective? Determining the effectiveness of different psychotherapy protocols provides psychologists and health professionals with better options for treating their clients. In this regard, the present study for the first time made a comparison between the effectiveness of the MBSR and positive psychology in hostility and physiological indicators of people with cardiovascular diseases.

2. Objectives

The present study aimed to compare the effectiveness of mindfulness-based stress reduction (MBSR) training with positive psychology in hostility and physiological parameters among cardiovascular patients.

3. Methods

This quasi-experimental study was conducted based on a pretest-posttest control group design. Firstly, the experimental and control groups were randomly selected and a pre-test was performed on them before the application of experimental interventions. At the end of the treatment methods, a post-test was administered in both groups. The comparison of pretest and posttest scores was made for statistical significance. Therefore, mindfulness-based stress reduction training and positive psychology were applied as the independent variables to determine their effectiveness in hostility and physiological parameters (i.e., pulse and blood pressure) which were considered dependent variables during the treatment and follow-up periods.

The statistical population included all cardiovascular patients referred to cardiology centers in Tehran in the first six months of 2020. Mulla Sadra Heart Clinic was selected from among heart clinics in Tehran due to its availability. To this end, purposive sampling was used. After reviewing all the clients' medical records and initial assessment of blood pressure and pulse, 98 cases

were proved to be eligible. A hostility questionnaire was also administered to these subjects. Finally, 45 cases were randomly selected as the sample. The sample size was selected based on the minimum sample size in the experimental studies (24). The subjects were then randomly assigned to three groups: experimental group 1 (n=15), experimental group 2 (n=15), and control group (n=15).

In addition, all three groups were matched in terms of age, gender, and education. The inclusion criteria were as follows: having a medical record in Sadra Heart Clinic, a minimum education of high-school degree, the age range of >18 years, non-use of painkillers and smoking, no mental or physical disability, full consciousness, acceptable auditory speech ability to respond, and tendency to participate in the study. On the other hand, the exclusion criteria entailed the provision of incomplete information in the questionnaires, unwillingness to continue working with the researcher, suffering from specific complications or disorders, and engagement in night shift work. The participants were provided with comprehensive and sufficient explanations about the objectives and stages of the research and were assured of the confidentiality of their responses prior to completing the questionnaire.

Instruments

Hostility Questionnaire

This 12-item questionnaire was developed by Radford in 1990. In this questionnaire, yes and no answers are scored 1 and 0, respectively. To get the overall test score, the sum of each answer should be calculated (ranging from 0-28). It is evident that higher scores demonstrate a greater likelihood of aggressive reaction; that is to say, the respondent is highly hostile. The investigation of the questionnaire in Iran also reported a retest coefficient of 0.82 and an internal consistency coefficient of 0.85. Its content validity has also been confirmed (25). In the present study, the Cronbach's alpha reliability coefficient of the questionnaire was calculated to be 0.80.

Hand-held sphygmomanometer

A sphygmomanometer is a spring-loaded device that uses air pressure to move a hand on a graduated plate, and each degree of which indicates one millimeter of mercury. While measuring blood pressure, the first place one hears a heartbeat is considered high blood pressure or systolic blood pressure. When the beep stops, the display shows a low-pressure gauge or diastole.

Pulse measurement through the wrist

The artery used to take the pulse through the wrist is the radial artery on the inside of the wrist near the side of the thumb. The most accurate measurement is obtained by placing a finger on this artery and counting the beats in 60 sec. After determining the research sample and identifying the control and experimental groups, in the pre-test stage, the hostility test and physiological parameters (pulse and blood pressure) were performed on the three groups. Following that, experimental group 1 underwent MBSR training, while experimental group 2 underwent positive psychology intervention (the control group was not trained). The interventions were undertaken during eight 90-min weekly sessions at Mulla Sadra Clinic Center. A summary of MBSR training sessions is as presented as follows (26):

Session 1: Communicating, defining, and conceptualizing the need to use mindfulness training

Session 2: Introduction to relaxation technique, relaxation training for 14 muscles including the forearm, arm, back leg muscles, thighs, abdomen, chest, shoulders, neck, lips, eyes, jaws, and forehead.

Session 3: Relaxation training for 6 muscle groups including hands and arms, legs and thighs, abdomen and chest, neck and shoulders, jaws, forehead and lips, and presenting relaxation tasks.

Session 4: Breathing mindfulness training with a brief review of the previous session, familiarity with the breathing mindfulness method, teaching the technique of inhaling and exhaling with relaxation and without thinking about anything else, teaching the technique of watching breathing, and presenting the tasks for mindfulness of breathing before going to bed for 20 minutes.

Session 5: Teaching the body scan method with training the method of paying attention to the body movement when breathing, focusing on the body parts and their movement and searching for the physical senses (e.g., hearing and taste), and presenting tasks for mindfulness of eating (eating calmly and paying attention to the taste and view of food).

Session 6: Thoughts mindfulness training with teaching the attention to the mind, negative and positive thoughts, pleasant and unpleasant thoughts, allowing negative and positive thoughts to enter the mind and easily take them out of the mind without judgment and deep attention to them and presenting the tasks for writing daily negative and positive experiences without judging them.

Session 7: Full Mindfulness with repetition of training sessions 4-6.

Session 8: Reviewing and summarizing previous sessions and performing post-tests.

A summary of Positive Psychology Sessions is presented as follows (27):

Session 1: Preparation and goal setting.

Session 2: Identifying abilities and creating

positive excitement by mentioning blessings and enjoying the present and good events

Session 3: Teaching gratitude techniques to promote positive thoughts, feelings, and behaviors

Session 4: Familiarity with the role of positivity to disease-related activities in mental-behavioral health and explaining the relationship between happiness, hope, and stress reduction

Session 5: Discussing constructive responses, interacting with other people, and requesting a positive relationship with family members

Session 6: Presenting patterns that enrich their lives with hope, happiness, and positivity, making group discussions of these examples, and writing examples of similar cases

Session 7: Re-framing life and giving meaning to life

Session 8: Talking about positive thinking and choosing a favorite exercise from the exercises presented in the previous sessions and discussing it

The statistical methods used in the present study included descriptive statistics (frequency, frequency percentage, mean and standard deviation) and inferential statistics (ANCOVA and MANCOVA). All statistical analyses were performed in SPSS software (version 22). In addition, a significance level of 0.05 was considered for all hypotheses.

4. Results

Based on the descriptive indicators of the sample group, out of 45 participants in this study, 8 (16%) cases has a high-school or associate degree, 26 (55%) subjects hold a bachelor's degree, and 14 (29%) cases had master's or higher degrees. In terms of gender, 21 (47%) participants were female, and 24 (53%) cases were male.

As displayed in Table 1, the two research groups did not have significant differences in all the studied variables in the pre-test stage. According to the present research design, the analysis of covariance was employed to analyze the main results. Moreover, the Shapiro-Wilk test was used to check the normality of the data in three groups.

Based on Table 3, Levene's test is non-significant in research variables. Therefore, the posttest error variance of the experimental groups and the control group are not significantly different, and the assumption of homogeneity of variances of research variables is confirmed.

As demonstrated, the Box's M test results are not significant; that is to say, the condition of difference between the covariance matrices is established.

According to the results presented in Table 2, a significant difference can be observed between hostility and physiological indicators (i.e. blood pressure and pulse) in the three groups according to the value of F and their significance level (P<0.001).

Table 1. Mean and standard deviation of research variables in terms of group membership and evaluation stages

Indicators		Mindfulness		Positive Psychology		Control	
Variables	Step	M	SD	M	SD	M	SD
Hostility	Pretest	22.01	23.34	21.97	23.67	20.60	24.59
	Posttest	11.91	3.50	12.40	4.02	21.01	5.06
Blood Pressure	Pretest	77.11	7.63	77.06	7.55	76.97	7.66
	Posttest	70.04	7.76	70.36	7.98	76.80	7.87
Pulse	Pretest	15.60	1.64	15.32	1.45	15.74	1.48
	Posttest	12.11	0.98	12.09	1.04	15.63	1.51

Table 2. Results of testing normality of data distribution

Indicators	Pretest		Posttest	
	F	P	F	P
Hostility	0.683	0.738	0.945	0.462
Blood pressure	0.756	0.897	0.234	0.327
Pulse	0.823	0.923	0.324	0.487

The results pointed to the normal distribution of research data.

Table 3. Conditions to use Covariance analysis

Indicators	Levene's test for equality of variances		Regression slope	
	F	P	F	P
Hostility	2.89	0.091	1.30	0.263
Blood pressure	1.44	0.134	0.098	0.324
Pulse	0.80	0.458	1.03	0.398

Table 4. Box's M test results

	Box	F	P
Hostility	27.24	1.01	0.178
Blood pressure	14.96	0.98	0.295
Pulse	12.76	0.80	0.324

The results of the least significant difference (LSD) post hoc test on comparing the mean values of hostility and physiological parameters (i.e., blood pressure and pulse) indicated that the experimental group 1 (MBSR training) and experimental group 2 (positive psychology) significantly differed from the control group. In other words, according to the mean values of the experimental groups 1 and 2, the results demonstrated the effectiveness of MBSR training and positive psychology in hostility and physiological parameters (blood pressure and pulse). The results also showed no significant difference between the effectiveness of MBSR training and positive psychology in hostility and physiological parameters (blood pressure and pulse).

The results of the Shapiro-Wilk test indicated that the difference between the two research variables was not significant. In other words, the results pointed to the normal distribution of research data.

As depicted in Table 8, Levene's test results are non-significant regarding hostility. Therefore, the post-test error variance is not significantly different in the three groups, and the condition of homogeneity of variances of research variables is confirmed.

According to the results of Table 3, a significant difference is observed in terms of hostility among the three sample groups according to the value of F and their significance level (P<0.001).

As presented in Table 4, the levels of significance of all tests indicated that the three groups significantly differ in the mean values of the tests in terms of at least one of the physiological indicators. Therefore, a significant difference is observed among the sample groups in at least one of the physiological parameters.

Table 5. Results of MANCOVA analysis on research variables in the three groups

Variable	MS	DF	MM	F	P	Eta2
Hostility	943.25	1	943.25	49.64	0.001	0.224
Blood Pressure	834.07	1	834.07	31.09	0.001	0.186
Pulse	791.13	1	791.13	28.42	0.001	0.156

Table 6. Results of least significant difference post hoc test to compare the effectiveness of the two methods in the three groups

Variable	Group		Mean difference	Sig
Hostility	Experimental 1	Experimental 2	-0.49	0.483
		Control	-9.01	0.001
	Experimental 2	Control	-8.31	0.001
Blood pressure	Experimental 1	Experimental 2	0.30	0.532
		Control	-6.76	0.001
	Experimental 2	Control	-6.44	0.001
Pulse	Experimental 1	Experimental 2	0.02	0.767
		Control	-3.52	0.001
	Experimental 2	Control	-3.54	0.001

Table 7. Results of testing the normality of the hostility

Indicator	Pretest		Posttest	
	F	P	F	P
Hostility	0.684	0.739	0.847	0.461

Table 8. Conditions to use Covariance analysis

Indicator	Levene's test for equality of variances		Regression slope	
	F	Significance	F	Significance
Hostility	2.89	0.091	1.30	0.263

Table 9. Results of ANCOVA on hostility in the three groups

Variable	MS	DF	MM	F	P
Hostility	1257.24	1	1257.24	82.76	0.001

Table 10. MANCOVA results for physiological indicators in posttest

Test	Value	F	DF of hypothesis	DF of error	Significance	Effect size	Test power
Lambda Wilks	0.109	8.23	2	42	0.001	0.271	1

Table 11. MANCOVA results on subscales of physiological indicators among the three groups

Variable	MS	DF	MM	F	P
Blood pressure	245.56	1	245.56	5.19	0.001
Pulse	212.13	1	212.13	4.34	0.001

According to Table 5, a significant difference can be detected in the three groups regarding the physiological indicators according to the value of F and their significance level (P<0.001). The results of the LSD post hoc test on comparing the mean scores of physiological indicators showed that experimental groups 1 and 2 were significantly different from the control group. In other words, according to the mean values of the two experimental groups, the results pointed to the effectiveness of MBSR training and positive psychology in physiological parameters. The results also suggested that there is no significant difference between the effectiveness of the two methods in physiological parameters.

5. Discussion

The present study aimed to compare the effectiveness of MBSR training and positive psychology in hostility and physiological parameters among patients with cardiovascular diseases. Statistical results showed that both treatments were effective, and the members of both experimental groups were significantly different from the control group; nonetheless, there was no significant difference between the effectiveness of the two training methods in terms of hostility. Although no research has compared MBSR training with positive psychology, these findings are consistent with the results of the studies by Tavakoli and Kazemi (28) and Basaknejad et al. (29) who examined the effectiveness of these two approaches.

Positive psychology can help people to cope with difficult and stressful life events and get over their losses by putting an emphasis on inner resilience, coping mechanisms, and positive thinking, instead of pathology. In other words, it trains individuals to be happy and achieve hope, instead of dwelling on pain and suffering. Positive psychology, which focuses on strengths and positive emotions, gives people the necessary tools for achieving the desired level of well-being regardless of their circumstances. It also enables them to understand how to use hope, optimism, flexibility, interest, wisdom, altruism, religion, and spirituality, finding the best way to deal with problems. As a result of the abovementioned factors, positive psychology training enhances patients' life satisfaction.

Positive psychology approaches can also increase life satisfaction and reduce hostility through a sense of greater control over life. This training style reduces the likelihood of negative personal perceptions and increases positive personal perceptions by the devotion of assiduous attention to strengths and positive experiences, identification of emotions, self-talk, as well as the exploration of distortions and cognitive errors. Therefore, positive psychology training enables people to take greater responsibility for themselves and their health and provides a good opportunity for a better and thorough understanding of these factors, improving the life satisfaction of cardiovascular patients by promoting health and quality of life.

In general, it can be stated that a positive psychotherapy program is an effective and efficient program to promote mental health and prevent mental health problems among cardiovascular patients. Moreover, due to the prevailing approach of this program in provoking positive emotions and raising people's awareness of their abilities, it enhances the level of life satisfaction and optimism among people.

In explaining the effectiveness of mindfulness on hostility, it can be argued that in the method of attention control training, one learns to clear his/her mind of any judgments that lead to aggression and focus deeply on the present and apply this training in daily behaviors and activities. To increase attention control, individuals learn to do this exercise intermittently in their assigned tasks to the point where they are fully aware of time and place. Self-awareness enables people to attain more peace and knowledge of themselves, and in times of anger, due to increased self-awareness, they initially become aware of the existence of anger within themselves and accept it.

By becoming self-aware and gaining the ability to review and reconstruct the intensity and direction of emotions in oneself and others, individuals adjust and internally control negative emotions and change their direction toward compromise. Through mindfulness-based exercises and techniques, patients become aware of their daily activities, controlling the automatic functioning of the mind in the moment-to-moment world of thoughts, feelings, and mental states and getting released from the automatic mind focused on the past and the future. Due to the specific conditions of the disease and the existing limitations, low general health and high hostility are common among patients with cardiovascular diseases and can be mitigated by mindfulness therapy.

Statistical results also demonstrated that both treatments were effective, and the members of both experimental groups were significantly different from the control group; nonetheless, there was no significant difference between the effectiveness of the two training methods in terms of physiological parameters. Although no research has compared MBSR training with positive psychology, these results are consistent with the findings of the studies by Tavakoli and Kazemi (28) and Basaknejad et al. (29) who examined the effectiveness of these two approaches. This finding can be justified on the ground that our minds often interpret and deduce events which eventually cause lasting reactions and feelings.

In people with high blood pressure, the mind always tends to have negative and disturbing thoughts; however, mindfulness helps people to transcend emotions without judgment and accept emotions and physical phenomena as they occur.

On the other hand, Heshmati and Zemstani (30) investigated the effectiveness of the MBSR program in the health status of patients with cardiovascular diseases. They concluded that this program showed relatively low efficiency in the enhancement of their health status. The inconsistency between the results of the present study and those reported by Heshmati and Zemestani may be attributed to differences in the choice of research variables since the effectiveness of the MBSR program on blood pressure and pulse has not been measured in their study.

Furthermore, according to Kabat-Zinn (26), in the mindfulness method, people are taught relaxation, breathing techniques, insights, and skills to deal with stress and complaints, which strengthen both physical and mental function. Therefore, individuals can be expected to have a positive attitude towards their abilities and successfully cope with stress. As a result, mindful people look at their problems without judgment, accept their problems and emotions, learn the ability to cope with problems, use relaxation and breathing techniques to cope with stress, and find a positive attitude toward their abilities.

According to the reviewed topics, mindfulness training reduces anxiety and high blood pressure. It can also be stated that training positive psychology results in the generation of positive feelings in people, more commitment to life, higher motivation to live, and mental health by cultivating abilities, virtues, positive emotions, and optimism. Furthermore, training positive psychology techniques and skills in order to strengthen and improve positive relationships with oneself, others, and the world will lead people to know themselves better and recognize the role of positive experiences in the promotion of self-esteem.

Given the aforementioned issues, positive psychology intervention can play a major role in the enhancement of the mental health of cardiovascular patients. Positive interventions also increase psychological well-being and life satisfaction by provoking and reinforcing positive emotions, commitment in life, and giving meaning to life (6). In addition, practicing kindness and forgiveness mitigates the effect of negative emotions and positively affects life satisfaction and happiness. According to Compton and Hoffman (31), forgiveness and kindness can be considered one of the interventions to increase happiness, satisfaction, contentment, and meaning in life. In general, positive psychology interventions are one of the most effective programs for the enhancement of mental health.

Study Limitations

The most important limitations of this study were the use of available sampling method, the use of self-report tools and the limitation of the research community to the city of Tehran. Also, the conclusion of this study should be interpreted with caution, although the researcher's effort has been to make the conditions as possible as possible, it is always difficult to control human subjects and psychological treatment.

Strength of the study

Until now, no study has been done on heart patients that compares the effectiveness of MBSR and positive psychology and evaluates its effect on two important factors of general health and lifestyle.

6. Conclusion

The findings of the present study pointed to the importance and necessity of seeking effective solutions for the treatment and prevention of cardiovascular diseases in Iran since they affect a large and sensitive group of individuals. It is hoped that the results of this study can be useful in providing solutions in this area. Nevertheless, in order to confirm the effectiveness of this treatment in Iran, further studies and comparisons are needed in other parts of the country considering the cultural, ethnic, and linguistic diversities.

Among the notable limitations of this study, we can refer to the use of the convenience sampling method, the use of self-report tools, and the statistical population which was limited to Tehran. Furthermore, although it was tried to control the conditions, it is always difficult to control the human subjects particularly in the psychological treatment; therefore, the results of this study should be interpreted with great caution.

Since positive psychology intervention is a relatively inexpensive, practical, and efficient method, the results of this study provide practical implications for planners, professionals, and consultants. Therefore, it is recommended that counselors and psychologists in clinics and psychological service centers use such interventions, along with other methods, for the reduction of hostility. According to the results of the current study and the effectiveness of both methods in general health, lifestyle, and hostility of patients with cardiovascular diseases, the specialists are recommended to use these approaches accordingly. Although based on research findings, the two approaches are equally effective, this result should be considered a preliminary finding, and the application of these two methods in the form of single-

test and experimental designs is necessary at a large scale.

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Conflicts of interest

None.

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