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COMPARISON OF COGNITIVE EMOTION REGULATION STRATEGIES, FEAR OF NEGATIVE EVALUATION, AND PERFECTIONISM BETWEEN PATIENTS WITH CHRONIC HEART FAILURE AND HEALTHY SUBJECTS

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ABSTRACT

Chronic heart failure (CHF) is one of the most common medical conditions in the elderly and the main cause of their hospitalization. It has been postulated that psychological factors may play an important role in the pathophysiology and progression of cardiovascular disease. Mood disorders, negative emotions, and social isolation can be seen in patients with cardiovascular disease, including CHF.We aimed to evaluate cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism in patients with CHF and compare the results with those in healthy subjects.Sixty patients with CHF and left ventricular ejection fraction less than 40% referred to the Heart Failure Outpatient Clinic of Rajaie Cardiovascular, Medical, and Research Center (a tertiary center for cardiovascular medicine) were included in this study via convenient sampling. The control group was comprised of 60 healthy subjects chosen from among the hospital staff and the patients' relatives. The cognitive emotion regulation questionnaire (short form), brief fear of negative evaluation scale, and Tehran multidimensional perfectionism scale were filled for both the case and control groups and compared.There were considerable

differences between the patients with CHF and the healthy subjects regarding cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism. In cognitive emotion regulation strategies, the patients with CHF had higher negative scores, whereas the healthy subjects had higher positive scores. There were statistically significant differences in fear of negative evaluation and perfectionism between the patients and the healthy subjects ($P<0.05$).Our patients with CHF scored higher in self-perfectionism and the other items than did the healthy subjects. However, there was no considerable difference regarding society-based perfectionism between the two groups.

Keywords: Cognitive emotion regulation strategies; Fear of negative evaluation; Perfectionism; Heart failure

INTRODUCTION

Chronic heart failure (CHF) is a debilitating syndrome and is the principle cause of hospitalization in the elderly. The introduction of novel treatment approaches to cardiovascular disorders and the increased life span of individuals with these disorders have resulted in a rise in the number of patients suffering from CHF.

It has been shown that psychological factors exert remarkable effects on the natural course of any chronic disorder, not least cardiovascular disease. Mood disorders, negative emotions, and social isolation can be seen in the setting of medical illnesses and can aggravate the clinical course of patients. Type A personality, anger, violence, and hostility have been known as prominent psychological factors in the development and progression of cardiovascular disease.

Since cardiovascular disease can be categorized as psychosomatic, it is important to note a combination of biological and mental components.[1] Numerous studies have revealed that mood disorders, negative emotions, and social isolation are among the factors rendering individuals prone to various physical diseases. Emotional regulation is a process through which individuals un/consciously modulate their emotions so that they can respond appropriately to various environmental demands. Anxiety disorders and depression, for instance, are caused by cognitive regulation failure.[2] Not only do negative emotions, anger, and hostility lead to cardiovascular disease but also they further aggravate and deteriorate the impairments.[3] The subject of social anxiety/phobia is the most common type of anxiety disorder and has been of great

interest to scholars and researchers within the last decade. Indeed, social anxiety/phobia has been investigated from different theoretical and practical perspectives. Beck et al.[4] (1985) introduced dysfunctional attitudes as the fundamental cause of the problem, stating that the activation of dysfunctional attitudes through social circumstances creates a vicious circle which assists social anxiety disorder.

The main presumption of individuals affected by social anxiety disorder, according to Rapee and Heimberg[5] (1997), is that others generally criticize and judge them negatively. The authors believe that in behavioral/cognitive models, fear of negative judgment is considered the central nucleus of social anxiety disorder. Schelenker[6] (1980) maintains that individuals' fear of negative evaluation is an intrapersonal inhibitor considerably reflected in a range of sociopsychological phenomena — including self-expression, social supportive behavior, self-debilitation, social distress, and anxiety. The author recognizes fear of judgment as a distinct and diagnostic indicator of social anxiety/phobia. At an estimated prevalence of 13%, social anxiety disorder is regarded as the third largest mental healthcare problem after alcohol addiction and depression, respectively.[7] Flett et al.[8] (1996) deems perfectionism a multidimensional construct including self-oriented, other-oriented, and socially prescribed perfectionism dimensions. Self-oriented perfectionism is defined as having irrational expectations and standards for oneself, leading to a perfectionistic motivation. Other-oriented perfectionism is defined as harboring irrational expectations and standards for others, which — in turn — pressure them to have perfectionistic motivations of their own. Socially prescribed perfectionism is defined as developing perfectionistic motivations due to the fact that significant others expect them to be perfect.

Perfectionism traits may emerge among individuals in different life circumstances. These individuals tend to define high, unrealistic, and irrational standards for themselves and for their own significant others. They are never satisfied and content with themselves and their significant others as well.[8] Self-oriented perfectionists drive themselves toward self-resentment through excessive generalization of failures and displeasure with the performance of their own or their significant others, which is the major cause of many psychosomatic disorders.[9] Other-oriented perfectionists have high and perfectionistic standards for their own significant others and express irrational

expectations; they, thus, extend interpersonal conflict and hostility.[10]

Lifestyle and environmental conditions are two factors with significant effects on everyone's health and the good news is that both could come under one's self-control. Most cardiovascular diseases, on the other hand, are preventable. Indeed, research shows that the effects of environmental elements are much greater than are those of the genetic causes of heart failure. The identification of factors such as stress and appropriate coping strategies would successfully prevent cardiovascular disease.[11]

The serious effects of psychological variables upon physical diseases such as cardiovascular disease either in their onset or their persistence in all stages of life are progressively confirmed by different studies. Therefore, investigating cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism in patients with CHF in comparison with healthy individuals can be of great significance. In the current study, we aimed to determine whether there are any differences between patients with CHF and healthy subjects regarding cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism.

MATERIALS AND METHODS

After the study protocol was approved by the institutional research and ethics committee, 60 patients with a diagnosis of CHF and left ventricular ejection fraction ≤40% referred to the Heart Failure Outpatient Clinic of Rajaie Cardiovascular, Medical, and Research Center (a tertiary center for cardiovascular disease) were enrolled via convenient sampling in this case-control study.

The diagnosis of CHF was made by an expert cardiologist with a fellowship in heart failure and transplantation in accordance with the international published guidelines for the diagnosis and management of patients with CHF.

The control group was comprised of 60 documented healthy subjects chosen from among the hospital staff and the patients' relatives.

All the study participants were between 45 and 60 years of age and had at least high school diploma. The exclusion criteria included the presence of any psychological disorders under medical and/or nonmedical therapies, history of drug abuse or opium addiction (by self-report), history of other chronic medical diseases, or conditions except for heart failure for the case group.

All the participants gave written informed consent after having received comprehensive information on the aims of the study. After

the completion of demographic data sheets, the study participants were asked to fill out the study questionnaires. Cognitive emotion regulation questionnaire (short form), brief fear of negative evaluation scale, and Tehran multidimensional perfectionism scale were filled in for both the case and control groups and compared.

Cognitive Emotion Regulation Questionnaire (Short Form)

This questionnaire is a self-report tool and contains 18 articles and 9 microscales for the analysis of the individual's thoughts in the wake of negative experiences or damaging events. The microscales analyze 9 cognitive strategies — namely self-blame, other-blame, rumination, catastrophizing, perspective taking, positive refocusing, positive reappraisal, acceptance, and planning. According to Garnefeski and Kraaij, the Cronbach's alpha coefficient for the aforementioned 9 microscales is between 0.62 and 0.80. This investigation was standardized by Hasani et al.[12] in Iran, and the Cronbach's alpha coefficient of that was between 0.68 and 0.82 — denoting the appropriateness/validity. The mental properties of the cognitive emotion regulation questionnaire (short form) have been previously confirmed by international investigations.[13]

Brief Fear of Negative Evaluation Scale

The brief fear of negative evaluation scale[14] contains 12 articles and is designed to describe worrying beliefs. Each participant shows his/her state on a 5-point scale for each question. The cohesion coefficient of the long form is 0.96, and the internal consistency reliability coefficient and that of this scale retest were 0.96 and 0.75, correspondingly.

Tehran Multidimensional Perfectionism Scale

The Tehran multidimensional perfectionism scale questionnaire contains 30 questions and evaluates 3 dimensions — namely self-based perfectionism, other-based perfectionism, and society-based perfectionism — on a Likert scale from 1 to 5. The Cronbach's alpha coefficients of the subscales of self-based perfectionism, other-based perfectionism, and society-based perfectionism are 0.9, 0.91, and 0.81 — respectively — denoting good internal consistency.[15]

STATISTICL ANALYSIS

All the statistical analyses were performed using IBM SPSS, version 22, for Windows (IBM Corp., Armonk, NY, U.S.A.). The categorical variables were expressed as number and percentage and the quantitative variables as mean (standard deviation). A P value <0.05 was considered statistically significant.

The analyses comprised descriptive and inferential statistics. The former comprised frequency, percentage, central index, and distribution index. The latter encompassed the use of the Kolmogorov–Smirnov test to investigate normal distribution of the variables, multivariate variance analysis to perform between-group comparisons, and the Levene test to assess the equality of variances for a variable calculated for two or more groups.

RESULTS

General Characteristics of the Study Participants

Table 1 depicts the demographic data of the study population. The mean (standard deviation) of age in the case and control groups was 45 and 60, respectively. Additionally, 48.3% of the patients in the case group were female and 48.3% in the control group were male.

Table 1: Demographic data of the study participants (n, 120)

	Patients with Chronic Heart Failure N, 60	Healthy Subjects N, 60	P Value
Gender (F/M), n, (%)	F, 29(48.3) M, 31(51.6)	F, 28(46.6) M, 32(53.3)	0.062 0.059
Age group, n, (%) 45 to 50 y 51 to 55 y 56 to 60 y	 28(46.6) 12(20) 13(21.6)	 28(46.6) 14(23.3) 15(25)	 0.0542 0.061 0.056
Educational level, n, (%) High school diploma Associate degree Bachelor's degree Master's degree	 35(58.3) 15(25) 7(11.6) 3(5)	 35(58.3) 15(25) 8(13.3) 2(3.3)	 0.0651 0.533 0.093 0.058

Data Description according to the Investigation Questions

This section presents an analysis of the mean and the standard deviation of the components of the investigation variables (i.e., strategies of cognitive emotion regulation and their components, fear of negative evaluation, and perfectionism and its components).

Strategies of Cognitive Emotion Regulation

Table 2: Mean and standard deviation of the positive and negative cognitive emotion strategies and their components in the healthy subjects and the patients with chronic heart failure (CHF)

Cognitive Emotion Regulation Strategies	Patients with Chronic Heart Failure N, 60	Healthy Subjects N, 60	P Value
Positive cognitive emotion regulation (Mean &standard Deviation)	16.81&3.75	18.60&3.82	0/059
Positive refousing(Mean &standard Deviation)	3.98&1.57	4.73&1.82	0/085
Emphasis on planning(Mean &standard Deviation)	4.03&1.68	5.11&1.86	0/056
Positive reappriasal (Mean &standard Deviation)	4.18&1.78	5.10&1.73	0/098
Putting into perspective (Mean &standard Deviation)	3.98&2.13	4.83&1.98	0/71
Negative cognitive emotion regulation (Mean &standard Deviation)	34.10&3.77	20.06&3.93	0/082
Self-blame(Mean &standard Deviation)	5.05&1.65	4.11&1.35	0/075
Acceptance (Mean &standard Deviation)	5.10&1.81	4.30&1.66	0/066
Rumination(Mean &standard Deviation)	4.43&1.71	3.68&1.59	0/071
Catastrophizing (Mean &standard Deviation)	4.85&1.82	4.03&1.68	0/058
Other-blame (Mean &standard Deviation)	4.66&1.76	3.93&1.64	0/061

According to Table 2, the mean of positive cognitive emotion regulation strategies and their components was higher in the healthy subjects, while the mean of negative cognitive emotion regulation strategies was higher in the patients with CHF.

Fear of Negative Evaluation

Table 3: Mean and standard deviation of fear of negative evaluation in the healthy subjects and the patients with chronic heart failure (CHF)

Variable	Patients with Chronic Heart Failure N, 60	Healthy Subjects N, 60	P Value
Fear of negative evaluation (Mean &standard Deviation)	27.41&7.20	24.38&5.61	0/054

As is depicted by Table 3, the mean of fear of negative evaluation was higher in the patients with CHF than in the healthy group.

Perfectionism

Table 4: Mean and standard deviation of perfectionism and its components in the healthy subjects and the patients with chronic heart failure (CHF)

Variable	Patients with Chronic Heart Failure N, 60	Healthy Subjects N, 60	P Value
Perfectionism(Mean &standard Deviation)	83.23&12.47	73.41&10.75	0/082
Self-based perfectionism(Mean &standard Deviation)	28.96&7.19	24.38&6.05	0/063
Other-based perfectionism(Mean &standard Deviation)	27.78&6.44	24.61&6.01	0/058
Society-based perfectionism (Mean &standard Deviation)	26.48&6.72	24.41&5.93	0/092

According to Table 4, the mean of perfectionism and its components was higher in the patient group than in the control group.

Evaluation of the Assumptions

There were considerable differences between the two groups apropos cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism.

Table 5: Results of the multivariate variance analysis test to compare the components of cognitive emotion regulation, fear of negative evaluation, and perfectionism between the healthy subjects and the patients with chronic heart failure

Test	Amount	F	Degrees of Freedom of the Assumption	Degrees of Freedom
Pillai	0.38	17.613	4	115

According to Table 5, the results of the Pillai test constituted statistical significance ($P<0.01$) — demonstrating a considerable difference in the responsiveness to at least one of the components of the strategies of cognitive emotion regulation, fear of negative evaluation, and perfectionism between the two study groups. A univariate variance analysis was conducted within the context of a multivariate variance analysis (multivariate analysis of variance [MANOVA]) in order to find the different variables between the two groups, the results of which are depicted in Table 6.

Table 6: Results of the univariate variance analysis to evaluate the components of the strategies of cognitive emotion regulation, fear of negative evaluation, and perfectionism separately in the healthy subjects and the patients with chronic heart failure

Variables	Sum of Squares	Degrees of Freedom	Mean Squares	F
Positive cognitive emotion regulation strategy	95.408	1	95.408	6.640
Negative cognitive emotion regulation strategy	488.033	1	488.033	32.886
Fear of negative evaluation	276.033	1	276.033	6.625
Perfectionism	276.033	1	276.033	21.327

There were statistically significant differences as regards positive cognitive emotion regulation, negative cognitive emotion regulation, fear of negative evaluation, and perfectionism between the healthy group and the group with CHF ($P<0.05$, $P<0.01$). According to the mean values presented in Table 2, Table 3, and Table 4 — the patients with CHF had higher marks in negative cognitive emotion regulation, fear of negative evaluation, and perfectionism than did the healthy group.

Evaluation of the First Assumption

There was a considerable difference between the patients suffering from CHF and the control group with respect to the strategies of cognitive emotion regulation.

Table 7: Results of the multivariate variance analysis to compare cognitive emotion regulation strategies between the healthy subjects and the patients with chronic heart failure

Test	Amount	F	Degrees of Freedom of the Assumption	Degrees of Freedom
Pillai	0.283	23.041	2	117

As is demonstrated by Table 7, the results of the Pillai test constituted statistical significance ($P<0.01$) — showing a marked difference apropos the strategies of cognitive emotion regulation between the two groups. The difference between the two groups was further assessed via a univariate variance analysis in the context of a multivariate variance analysis (MANOVA), and the results are presented in Table 8.

Table 8. Results of the univariate variance analysis to analyze the components of cognitive emotion regulation separately in the healthy subjects and the patients with chronic heart failure

Variables	Sum of Squares	Degrees of Freedom	Mean Squares	F

Positive cognitive emotion regulation strategy	**95.408**	**1**	**95.408**	**6.640**
Negative cognitive emotion regulation strategy	**488.033**	**1**	**488.033**	**32.886**

As is demonstrated by Table 8, there was a considerable difference in regard to the negative and positive cognitive emotion regulation strategies between the patients suffering from CHF and the control group. The healthy individuals scored higher in the positive cognitive emotion regulation strategies, while the latter had higher scores in the negative cognitive emotion regulation strategies.

Evaluation of the Second Assumption

There was a significant difference between the two groups regarding fear of negative evaluation.

Table 9: Results of the multivariate analysis of variance to compare fear of negative evaluation between the healthy subjects and the patients with chronic heart failure

Variables	F	Degrees of Freedom between the Groups	Degrees of Freedom within the Groups
Fear of negative evaluation	**6.625**	**1**	**118**

As is illustrated by Table 9, the calculated amount of F was significant for values < 0.05 for fear of negative evaluation — denoting a sizeable difference between the healthy individuals and the patients with CHF. The patient group had a higher score in fear of negative evaluation than did the control group.

Evaluation of the Third Assumption

There was a substantial difference between the case and control groups in terms of perfectionism.

Table 10: Results of the multivariate analysis of variance to compare perfectionism between the healthy subjects and the patients with chronic heart failure

Variables	F	Degrees of Freedom between the Groups	Degrees of Freedom within the Groups
Perfectionism	**21.327**	**1**	**118**

According to Table 10, the calculated amount of F was significant for values< 0.01 — demonstrating a considerable difference between the two study groups. The patients with CHF scored higher in perfectionism

than did the healthy individuals in the control group.

Evaluation of the Fourth Assumption

There was a marked difference as regards the dimensions of the strategies of cognitive emotion regulation between the two groups.

Table 11: Results of the multivariate analysis of variance to compare the strategies of cognitive emotion regulation between the healthy subjects and the patients with chronic heart failure

Test	Amount	F	Degrees of Freedom of the Assumption	Degrees of Freedom
Pillai	**0.332**	**6.087**	**9**	**110**

As is depicted by Table 11, the results of the Pillai test constituted statistical significance (P<0.01) — demonstrating a considerable difference between the two study groups regarding at least one of the strategies of cognitive emotion regulation. The difference between the case and control groups was further evaluated through a univariate variance analysis in the context of a multivariate variance analysis (MANOVA); the results are presented in Table 12.

Table 12: Results of the multivariate analysis of variance to compare the cognitive emotion regulation strategies between the healthy subjects and the patients with chronic heart

Variables	Sum of Squares	Degrees of Freedom	Mean Squares	F
Self-blame	**26.133**	**1**	**26.133**	**11.462**
Acceptance	**19.200**	**1**	**19.200**	**6.364**
Rumination	**16.875**	**1**	**16.875**	**6.151**
Catastrophizing	**20.008**	**1**	**20.008**	**6.494**
Other-blame	**16.133**	**1**	**16.133**	**5.549**
Positive refocusing	**16.875**	**1**	**16.875**	**5.810**
Analysis emphasis	**35.208**	**1**	**35.208**	**11.105**
Reevaluation	**25.208**	**1**	**25.208**	**8.163**
Perspective taking	**21.675**	**1**	**21.675**	**5.102**

As is shown by Table 12, all the dimensions of negative and positive cognitive emotion regulation strategies were different between the two study groups. The patients with CHF had a higher score in the strategies of cognitive emotion regulation.

Evaluation of the Fifth Assumption

There was a remarkable difference between the patients suffering from CHF and the normal individuals regarding perfectionism.

Table 13: Results of the multivariate analysis of variance to compare the components of perfectionism between the healthy subjects and the patients with chronic heart

Test	Amount	F	Degrees of Freedom of the Assumption	Degrees of Freedom
Pillai	**0.159**	**7.295**	**3**	**116**

According to Table 13, the results of the Pillai test constituted statistical significance (P<0.01) — revealing a considerable difference between the two

groups regarding at least one of the components of perfectionism. The difference between the two groups was subjected to further analysis using a univariate variance analysis in the context of a multivariate variance analysis (MANOVA), the results of which are presented in Table 14.

Table 14: Results of the multivariate analysis of variance to compare perfectionism separately in the healthy subjects and the patients with chronic heart

Variables	Sum of Squares	Degrees of Freedom	Mean Squares	F
Self-based perfectionism	**630.280**	**1**	**630.280**	**14.240**
Other-based perfectionism	**300.833**	**1**	**300.833**	**7.740**
Society-based perfectionism	**128.133**	**1**	**128.133**	**3.182**

Table 14 shows that self-based and other-based perfectionism reached statistical significance ($P<0.01$), denoting a considerable difference between the two study groups regarding these components. Given the mean value of 4, the patients suffering from CHF had higher scores in the self-based and other-based perfectionism domains than did the control group.

DISCUSSION

According to the statistical analysis in the present study, there was a significant difference between the patients suffering from CHF and the healthy subjects in terms of cognitive emotion regulation strategies, fear of evaluation, and perfectionism. With respect to the mean values (Table 2), the patients with CHF scored higher in cognitive emotion regulation strategies. There was a considerable difference between the patient group and the healthy controls apropos perfectionism. The patients with CHF scored higher in self-perfectionism and the other items than did the control group, while there was no statistically significant difference concerning society-based perfectionism between the two groups. Other studies in different countries have shown similar results. Seto et al.[3] argued that negative emotions and hostility alongside the onset of coronary artery disease could intensify and aggravate the physical condition. Another study showed that a lack of appropriate skills and capabilities to regulate emotions and adjust to events and negative experiences in life could create some detrimental effects on health, mental hygiene, physical condition, social matters, and interpersonal relationships.[16] In another study, the male patients with coronary artery disease had considerably higher scores than did the control group in the two dimensions

of self-based and other-based perfectionism.[10]

Cognitive emotion regulation is one of the basic necessities of human life in that it enables the individual to manage emotions after a stressful event.[13] Research shows that the majority of the individuals who suffer from clinical disorders (e.g., behavioral, stress-based) draw upon preventive strategies or repression more frequently than do healthy individuals.[17]

Anxiety usually gives rise to some signs of the stimulation of the autonomic nervous system such as headache, excessive perspiration, rapid heartbeat, respiratory problems, and gastrointestinal disorders.[18] Walter Cannon considers physical response to emergency situations as the fight or flight response because stress causes the adrenal gland to secrete epinephrine, which stimulates the person. According to Cannon, this stimulation has some positive and negative effects: while the fight or flight response is profitable insofar as it enables the individual to react more swiftly, the stimulation state is detrimental to the body if it persists. Also, in a stressful situation — biological, mental, and social systems act together and the stimulation of the autonomic nervous system results in the manifestation of some anxiety-related signs in the cardiovascular, gastrointestinal, and respiratory systems. These environmental signs of stress are not exclusive to stress-based behaviors. According to Cannon, when cats encounter some barking dogs — they sense the physiological/behavioral signs of fear and experience the release of epinephrine.[19]

Social anxiety disorder stems from the individual's feeling of humiliation in the face of criticism. Individuals suffering from social anxiety disorder usually feel that they are under observation and, thus, feel anxious before — for instance — going to parties or eating with others. The salient signs of social anxiety disorder are rapid heartbeat, faint, nausea, respiratory disorders, and excessive perspiration. These disorders often become so intense that the individual eschews appearance in public events. It is deserving of note, however, that although the sufferers are often cognizant of the fact that their fears are not realistic, they are simply incapable of altering their attitude and behavior on their own.[20]

Negative cognitive emotion regulation strategies (i.e., self-blame, mental rumination, catastrophizing, acceptance) and fear of negative evaluation originate from social anxiety disorder and futile, excessive efforts to be perfect. They play an important

role in the onset of cardiac events through the release of stress hormones like cortisol, epinephrine, and norepinephrine from the adrenal gland. Patients suffering from cardiovascular disease are not able to adequately cope with environmental factors and are liable to secrete more stress hormones, which intensifies negative emotions and the resultant physical disorders. These emotions are detrimental to the cardiovascular system because excessive stress leads to the excessive secretion of adrenaline into the blood and increases the likelihood of blood coagulation. Furthermore, negative cognitive emotion regulation, fear of negative evaluation, and perfectionism undermine the individual's ability to sufficiently cope with stressful and problematic situations and lead to recourse to avoidance coping strategies, thereby compromising the individual's health.

The results of the current study may contribute to our collective knowledge about the role of psychological factors in the onset of cardiovascular disease. Our results chime in with those of previous investigations comparing cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism between patients suffering from cardiovascular disease and healthy individuals. Nonetheless, questions remain as to how effective is each of the variables of cognitive emotion regulation strategies, fear of negative evaluation, and perfectionism on the onset of cardiovascular disease; what constitutes effective psychological factors in the onset of cardiovascular disease; and how practical interventions such as raising awareness would be in alleviating negative cognitive emotion regulation strategies, fear of evaluation, and perfectionism in patients with cardiovascular disease. Apart from medicinal treatments, it is possible to plan and execute psychological treatments to lessen the three aforementioned negative strategies with a view to preventing the resultant exacerbation in the condition of patients with CHF.

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