

Effect of cognitive behavioral stress management program on psychosomatic patients' quality of life

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ABSTRACT

Background: Level of stress and its management affects the dimensions of psychosomatic patients' quality of life (QoL), which is an important psychological issue. The present study aimed to investigate the effect of cognitive behavioral stress management program on psychosomatic patients' QoL. In cognitive behavioral method, patients discover thought and behavioral mistakes and recover them. The criterion to evaluate the success of the present study was measurement of the patients' QoL and its notable improvement after intervention.

Materials and Methods: This is a before-and-after clinical trial with a control group. The study participants comprised 70 psychosomatic patients referred to subspecial psychiatry clinic in Isfahan who were selected through convenient sampling and allocated to the study and control groups. Quality of Life Questionnaire (SF36) was adopted to collect the data. The questionnaire was completed by the participants in three stages of before-and-after up to a month after intervention. Cognitive behavioral stress management program was administrated in study group for eight straight sessions, two month, and a month after intervention. Along with this, conventional medical treatments were conducted for both the groups. Data were analyzed by ANOVA. The significance level was $P < 0.001$.

Results: There was no significant difference in QoL mean scores between the two groups before intervention (44, 43.1), but mean scores of QoL were significantly higher in intervention G (55.7, 59.1), compared to control (39.8, 35.7), after intervention ($P < 0.001$) and one month after intervention ($P < 0.001$).

Conclusions: Cognitive behavioral stress management, conducted in the present study, had a notable effect on QoL. Therefore, designing psychological interventions based on cognitive behavioral stress management is suggested as an efficient clinical intervention.

Key words: Cognitive behavioral therapy, Iran, nursing, psychosomatic disorder, quality of life stress management

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INTRODUCTION

Stress is a personal experience and its interpretation differs for different people.^[1] There is a correlation between stress, disease state, the ability to adapt to stress, social support systems, and the individual's pathological behaviors.^[2] A previous research has revealed the relationship between thoughts, feelings, and body function.^[3] Regarding the relationship between psychological disorders and diseases and physical changes,

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it can be stated that these problems sometimes have crossing and common points with one another. Because of the relationship between body and mind, natural and physical pathological changes can trigger the symptoms of debilitating psychological illness. The consequences of this psychological state can have negative effects on health and the promotion of physical treatment.^[4] Psychosomatic illnesses are real physical diseases and psychological factors are involved in their emergence, escalation, process, and outcome, which are a risk factor for physical illnesses.^[3] In the contemporary holistic view, all diseases are considered as psychosomatic.^[5] Stress, in interaction with biological and genetic potential, is considered as the main element in the creation or exacerbation of psychosomatic disorders.^[6,7] Approximately 50% to 80% of diseases are closely related to the phenomenon of stress. Stomach ulcers, bronchial asthma, arthritis, heart attacks, alcoholism, cancer, and neurological diseases are examples of such diseases. Vascular, skeletal, muscular, reproductive, urinary tract, and skin disorders have also been considered in this category.^[8,9] Chronic stress constitutes 90% of the causes of these diseases.^[10] The prevalence of these disorders is estimated between 0.2% and 2% among women and less than 0.2% among men.^[11] Stress affects different aspects of the quality of life (QOL) in these patients.^[12,13] Research has shown that psychosomatic patients have lower QOL than other individuals.^[14-17] QOL is an important indicator and its measurement is necessary in various health researches.^[18,19] QOL includes major concepts such as physical, psychological, and social concepts, which generate overall life satisfaction.^[20] In the present study, the QOL index was considered to be the criterion for determining the effectiveness of stress management to improve the symptoms of psychosomatic diseases.

An individual's ability to reduce stress and cope with stressful situations is called stress management.^[21] Given the significant contribution of stress to psychosomatic diseases, appropriate responses to stressful stimulants contribute to the improvement of the patients' health.^[22] Psychotherapy is effective when the patients realize that their problems are not only physical but are influenced by their dissatisfaction, conflicts, and psychological problems.^[23] Therefore, clinical experts have considered various methods of psychotherapy including cognitive-behavioral therapy to treat these disorders.^[24] Treatment and QOL are closely associated with each other and individuals who respond positively to treatment tend to have a higher QOL. Cognitive behavioral approach is a method in which individuals identify their thoughts and behavioral mistakes and correct them.^[25] Stress management program with cognitive behavioral approach includes elements such as awareness of stress, relaxation training, identification of dysfunctional

thoughts, cognitive restructuring, problem solving process training, assertiveness training, anger management, and time management.^[21] This program has been organized with respect to concerns such as lack of personal control, coping demands, social isolation, anxiety, and depression, which are all important in patients with chronic and severe physical illnesses.^[26] Although in most previous studies, the effectiveness of stress management intervention on QOL has been reported, contradictory findings on the extent of this effect and its relation with QOL in these patients is still an incentive for a more detailed explanation of this issue. Discovering the contribution of different factors related to QOL can determine the priorities of interventions aimed at improving QOL.^[27] In studies conducted among other groups, the reviewing and recalling of the discussed topics by the patient at home has received little attention. This issue was taken into consideration in the present study through providing a summary of the sessions in pamphlets at the end of each session and a CD at the end of the program. Physicians are unable to devote sufficient time to long discussions with patients about their experiences and expectations of their treatment and the disease.^[5] However, these patients must learn how to cope with their disease and its psychological and social impacts. Therefore, this study was conducted to determine the effect of a cognitive-behavioral stress management program on the QOL of these patients. Moreover, in order to identify the effectiveness of interventions to improve symptoms, QOL index was considered as the measurement criterion.

MATERIALS AND METHODS

In the present study, an approach was used in which patients identify and manage their disease-causing stress in relation to psychosomatic illness through recognition of their daily stressors using cognitive-behavioral approach. For this purpose, a clinical trial was conducted with two groups and in three stages (before, immediately after, and 1 month after the intervention). The research population included psychosomatic patients admitted to a Psychiatric Clinic in Isfahan, Iran. These patients had medical records in this center and a physician had diagnosed them with a psychosomatic disorder. By choosing the appropriate statistical formula, 32 subjects were estimated for the study, and assuming a 10% loss, 35 patients were estimated for each group. Therefore, from among the 3500 cases available at the center, 70 participants who satisfied the inclusion criteria were selected using a table of random numbers. A comparison of the study sample with that of previous similar studies showed the sample size of this study to be appropriate. These studies included those by Neshatdoost *et al.*,^[28] Davazdah-Emami *et al.*,^[29] Choobforush Zadeh *et al.*,^[30] and Parsamanesh *et al.*^[31]

with 20, 40, 24, and 30 subjects, respectively, in Iran, and similar foreign studies by Kuem and Tatiana *et al.*^[32] with 47 and 74 subjects, respectively. After selecting the participants, they were contacted and those who satisfied the inclusion criteria and were willing to participate were entered into the study. The inclusion criteria included having no substance dependence, higher than primary level education, over 18 years of age, no severe mental illness such as severe depression or schizophrenia. Written consent forms were obtained from all the participants in the first visit and the purpose of the study was explained to them. Then, the participants were assigned to two control and experimental groups using random allocation method (odd and even numbers). The intervention for the experimental group included 8 sessions of a 90-minute weekly program. At the end of each session, to increase the durability of the contents in the participants' memory, a pamphlet containing a summary of the meetings was distributed among the participants. The subjects of the sessions consisted of introduction of stress, explanation of the connection between thoughts and feelings, relaxation training, self-induction, cognitive distortions, and implementation of effective coping responses. The control group did not receive any intervention, but after the study, they were handed a package including an audio CD of the training sessions, pamphlets of the summary of sessions, and a booklet on life skills. A two-part questionnaire was used as the data gathering tool in this study. The first part consisted of a researcher-made demographic characteristics questionnaire and the second part included the SF-36 Questionnaire. This questionnaire contains 36 questions; in which 0 indicates the lowest level of QOL and 100 indicates the highest level of QOL. A score of less than 50 indicates a low QOL. This questionnaire was used in the studies by Jabalameli *et al.*^[33] and Drosdzol *et al.*^[34] Montazeri *et al.* in 2005 studied the validity and reliability of this questionnaire^[35] The reliability was evaluated using statistical analysis of internal consistency and the validity was studied through comparison of the recognized groups and convergent validity. Analysis of internal consistency showed that except the vitality subscale ($\alpha = 0.65$) other subscales of the Persian version of the SF-36 have the minimum standard reliability coefficients in the range of 0.77 to 0.9. The convergent validity test also showed appropriate results for the assumptions of measurements using the correlation between each question and the hypothesized scale. All obtained correlation coefficients were higher than the recommended amount of 0.4 (coefficient's variation range was 0.58 to 0.95). Factor analysis test also obtained two key components that justified 65.9% distribution of the subscales of the questionnaire. Overall, it showed that the SF-36 Questionnaire has the necessary reliability and validity for measuring health-related QOL.^[35] To

assess the QOL of these patients as well as the impact of psychological interventions on the improvement of this scale, the SF-36 Questionnaire was completed during three stages of before, immediately after, and 1 month after the intervention by both groups. To analyze the findings of this study, Statistical Package for the Social Sciences software (version 16, SPSS Inc., Chicago, IL, USA) and descriptive and inferential statistics (repeated measures ANOVA and independent *t*-test) were used. All *P* values of less than 0.05 were considered as significant.

Ethical considerations

The selected patients were reassured about data confidentiality and their access to the final results. Participants read and understood the information necessary to make an informed decision about their voluntary participation.

RESULTS

The mean age of the experimental group participants was 38.03 years (SD = 9.3) and the control group was 36 years (SD = 9.3). Independent *t*-test showed no statistically significant difference between the mean ages of the two groups. Chi-square test showed no statistically significant difference between the two groups in terms of the frequency distribution of marital status. Mann-Whitney test also showed no significant difference between the two groups in terms of the frequency distribution of education, income level, and duration of disease. Chi-square test showed no statistically significant difference between the two groups regarding the frequency distribution of the disease type. Table 1 illustrates the distribution of the disease type. The difference between the two groups regarding the underlying variables was not statistically significant; therefore, these variables were not controlled in the statistical analysis.

Repeated measures ANOVA showed that, in the experimental group, the mean QOL score in three stages (before, immediately after, and 1 month after the intervention) had a statistically significant increase. This mean had a statistically significant decrease in the control group during the same three stages [Table 2]. The independent *t*-test

Table 1: Frequency distribution of the disease type in the control and experimental groups

Disease type	Experimental		Control	
	Number	%	Number	%
Cardiac	10	33	5	15.6
Gastrointestinal	22	66.6	17	53.1
Dermal	10	33	12	37.5
Others	10	33	7	21.9

Table 2: Comparison of quality of life in the control and experimental groups before, immediately after, and 1 month after the intervention

Time	Experimental		Control		Independent t-test	
	Mean	SD	Mean	SD	t	P
Before the intervention	44.0	17.2	43.1	15.2	0.21	0.830
Immediately after the intervention	55.7	15.3	39.8	17.4	3.92	0.001
One month after the intervention	59.1	14.4	35.7	12.1	7.07	0.001
Analysis of variance						
F	68.05		18.99			
P	0.001		0.001			

showed that there was no statistically significant difference between the two groups in terms of the overall mean QOL score before the intervention ($P = 0.830$). Nevertheless, immediately after the intervention ($P < 0.001$) and 1 month after ($P < 0.001$) the overall mean QOL score in the experimental group was significantly higher than the control group [Table 2].

DISCUSSION

The present study investigated the multispectral dimensions of psychosomatic diseases. The QOL of patients with such diseases improved after the stress management program with cognitive behavioral approach. Research carried out in Iran and other countries on the basis of the stress management program with cognitive-behavioral approach showed that the effectiveness of these researches is focused on treating one particular disease and their results cannot be generalized to other conditions with the same origin.

The researcher did not find any domestic and foreign researches that had directly investigated the effectiveness of the stress management program with cognitive behavioral approaches on the QOL of patients with psychosomatic disorders. However, researches were found in which the impact of this intervention was studied on the QOL of individuals with physical illnesses; for example, studies on infertile women,^[30] patients with alopecia areata,^[28] and women with hypertension.^[33] Results of these studies indicated the positive influence of intervention on improving the QOL of the studied patients. These results were consistent with the mentioned researches.

The effects of intervention on physical and mental symptoms of physical illnesses have been investigated in other studies. For example, in the study by Davazdah-Emami *et al.*,^[29] considering that it seems that stress and depression are risk

factors for/or intensifier of diabetes, the intervention had fair results for blood glucose control and good clinical effect on patients with type-2 diabetes. In a similar study, Hamid was able to significantly control the patients' blood sugar and increase their ability to cope with stress, depression, and anxiety. After 6 months of follow-up, he proved the continuity of the effectiveness of the intervention.^[36] In the study by Kamkar *et al.*, the combining of drug treatment with psychological interventions was effective in reducing symptoms of irritable bowel syndrome, but there was no significant change in the level of depression and anxiety of the patients.^[37]

In a study on women with systemic lupus erythematosus, Neisiaani Habib Abadi *et al.* in 2011 assessed stress reduction as effective in the prevention of intensification of the disease symptoms.^[38] However, in these researches, QOL was not directly assessed. This study showed the improvement process of QOL in the three stages of before, after, and 1 month after the intervention in the experimental group. After the completion of the training sessions until the follow-up, it had a gentler gradient than before. The control group subjects had decline in terms of QOL during the study period. To explain this change, the self-efficacy of psychosomatic patients can be considered. The study by Khoustraavi *et al.* showed that self-efficacy of psychosomatic patients was lower than normal individuals.^[39] The study results were consistent with the findings of studies by Bandura and Taft in relation with low self-efficacy in these patients.^[40] Hence, it can be stated that due to the low self-efficacy of these patients they do not expect success; therefore, they cannot express themselves in social situations and internalize their feelings and manifest them physically. In stressful situations, these individuals have low stress tolerance and are less able to cope with problems due to their negative attitudes toward themselves; therefore, they choose negative practices such as withdrawal and drug treatments.^[41] Thus, the QOL of patients who do not receive an intervention will drop in an aggravated period. This declining process was also observed in the study by Parsamanesh *et al.*^[31] The results showed that the QOL score of the experimental group that received stress management training was significantly different from the QOL score of the control group. While the difference between the mean scores of the two groups before the intervention was less than one unit, this difference immediately after the intervention was close to 16 units and 1 month after was more than 23 units. This confirmed that the training program had a significant impact.

Some limitations of the study affected the findings and interpretations. These limitations included sampling of patients who were referred to tertiary health services,

failure to check the results in the long term, lack of control of the drugs used for diseases and synchronization of the participants in this respect. They also included individual differences, learning and implementing the techniques, the impact of foreign resources, especially mass media, on the mindset of the participants, and natural decline and loss of the participants due to unexpected problems and lack of motivation.

CONCLUSION

Cognitive-behavioral stress management program can be considered as one of the strategies to improve the QOL of patients with psychosomatic disorders. The findings of this study showed that stress management training will have a positive impact on improving the QOL of these patients.

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Conflicts of interest

There are no conflicts of interest.

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