Original Article

Comparing the effectiveness of supportive-expressive and cognitive-behavioral psychotherapy on depression in hemodialysis patients

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Abstract

Introduction: The present study aimed to compare the effectiveness of supportive-expressive and cognitive-behavioral psychotherapy on depression in hemodialysis patients.

Materials and Methods: This clinical trial conducted on hemodialysis patients who attended a private dialysis treatment center in 2014-2015. Among them, 45 patients selected and randomly assigned into 2 experimental groups and a control group. The experimental groups underwent supportive-expressive or cognitive-behavioral psychotherapy (Ten 45-minute sessions, once a week); but the control group did not receive any treatment. Beck depression II questionnaire was used to collect information. Data analysis was performed in two descriptive and inferential sections (analysis of covariance) using SPSS software.

Results: The results of covariance analysis showed that supportive-expressive and cognitive-behavioral psychotherapy are reducing depression in hemodialysis patients significantly (P<0.01). The effects of supportive-expressive treatment in short-term (pretest-posttest) and long-term were 15.73 and 19.07 points respectively. The effects of cognitive-behavioral therapy were 9.93 in the short term and 10.67 in the long term. Finally, comparing the profiles showed that the average of short-term and long-term effects in supportive-expressive treatment is higher than cognitive-behavioral therapy.

Conclusion: Based on the results, it seems that supportive-expressive therapy is more effective than cognitive-behavioral therapy to improve depressive symptoms in hemodialysis patients.

Keywords: Cognitive-behavioral therapy, Depression, Hemodialysis, Supportive-expressive therapy.

Introduction

Chronic renal failure is a pathophysiological disease, with a gradual and irreversible loss of kidney function, which includes blood purification, balancing salt and fluid concentrations (1). It is a very serious disorder because the inability to produce urine causes the body to collect waste products from metabolism, food, salts and inorganic water, and the body may need artificial kidneys and kidney transplants or dialysis to get rid of the waste. Although these methods clean the blood of excess salt, water, and metabolites, they are stressful.

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It should be noted that kidney transplantation is dangerous to health and dialysis may be very distressing for patients (2). Due to the aggressive nature of these procedures, the patient obviously becomes vulnerable to several problems (1). Also, the conducted studies indicated that the prevalence of depression and suicidal thoughts are higher in patients with chronic renal diseases (3,4).

In addition, it seems that patients who undergoing dialysis experience higher prevalence of depression compared to chronic kidney disease patients without dialysis (5).

In this line, the researchers report that kidney disease patients undergoing hemodialysis treatment suffer from stress, anxiety and depression (6-8).

So, due to the effect of depression on quality of life and medical outcomes in hemodialysis patients the psychological interventions such as cognitive behavioral therapy and supportive interventions such as expressive psychotherapy are necessary to use in this group (9-11).

For example, in a study titled "quality of life, clinical outcome, personality, and coping in chronic hemodialysis patients", D'Onofrio et al. showed that integrated and multifaceted management of dialysis patients leads to improved physical and mental components, including homework confrontation, avoidance confrontation and job position (12).

Also, the conducted studies showed that cognitive-behavioral therapy reduces depression and increases the quality of life in hemodialysis patients (13-15). In this line, Hou et al. also conducted a study entitled "effects of cognitive-behavioral therapy on insomnia of maintenance hemodialysis patients". Theyfound that cognitive-behavioral therapy improves depression, anxiety, hostility, and sleep quality in hemodialysis patients (15).

Various approaches are designed and implemented to treat depression, but one of the important reasons for the present study is that no research has been done before this research with supportive-expressive therapy and in this regard, no comparison has been made with cognitive-behavioral method, which is one of the most effective methods of treating psychological disorders. In addition to cognitive-behavioral therapy as a well-known method, the researcher intends to introduce a new method of supportive-expressive therapy

and to evaluate the original principle of the effectiveness of these methods in comparison with each other.

In the present study, two methods of psychotherapy, supportive-expressive and cognitive-behavioral therapy were used. Cognitive-behavioral therapy is a short-term approach (about 10 to 12 sessions) that can be used to correct a patient's concerns. The next method is supportive-expressive treatment, which has been performed on depressed people in this study. Due to the type and method of this treatment, a wide range of patients' problems are covered in this method and the treatment has a kind of high flexibility.

Materials and Methods

This clinical trial was conducted with pretest-posttest design in three groups (two experimental groups and one control group). Its statistical population included hemodialysis patients who attended a private dialysis treatment center in 2014-15. Of these, 45 patients were selected based on Cochran's statistical formula and they divided randomly into 3 groups. In terms of gender status, the number of men and women (with one difference being more men) was tried to be equal, and only samples that were willing to cooperate were reported as research samples. The annoying variable included IQ, which was initially tried to be partially controlled by interviews focusing on the Kent oral test. After completing the Beck Depression II Questionnaire, the research sample was used to diagnose moderate to severe depression.

The inclusion criteria include: 1. Iranian nation and residency in Mashhad city, 2. Written consent to participate in the study, 3. Not having another known chronic disease, 4. Be treated with dialysis for at least 8 months, 5. Not having another psychological disorder (a psychiatrist visited them for this purpose), 5. Not having experience about stressful event in the past six months, 6. Not having dependency to substances or alcohol, 7. Not having familial problems such as unwanted conflicts between family members and special tensions between couples, 9. People should be available for follow-up for 4 months.

The exclusion criteria include: 1. Not having willingness to continue the process of treatment and 2. Having absence in more than one session. In this study, ethical considerations were considered, which

include: 1. Presenting an official letter of introduction from the university to start the research, 2. Holding a group meeting for patients in order to provide the necessary explanations about the research in order to participate in this research, this will be done with their awareness, 3. Obtaining a written consent fromthe persons wishing to participate in the research, 4. Reassuring the individuals that all the results are confidential and only the general results of the research will be published without mentioning the names of the individuals. 5. Treating the patients in the control group, if they wish, after the completion of the research.

Research instrument

A) Beck Depression Inventory (BDI-II): It is a valid and reliable instrument and it contains 21questions (15 questions measure emotional symptoms and 6 questions measure physical symptoms). Each question includes 4 valuable options.

The scores ranged from zero to 3. The total score ranges from 0 to 63. Many researchers have confirmed the validity of this method. In addition, Beck reported in 1972 that its reliability with the Spearman-Brown method was about 0.93 (16). In Iran, Pourshahbaz reported that the coefficient of internal similarity of this test was 0.85 and its reliability was 0.81 (17). For treatment, the two groups underwent 10 psychotherapy sessions of 45 minutes once a week. It should be noted that in this study, a 4-month follow-up was performed and the treatment was performed by a therapist (the first author) under the supervision of an educational supervisor for each treatment method. In the supportive-expressive method and during the first few sessions, the therapist notices the patient's main complaint and clinical symptoms and addresses patient's strengths and weaknesses, the mechanisms used, his/her own performance, and patient's level of self-esteem and combines formulation with the hypothesis of acute and chronic defects in defensive performance, adaptive skills, and performance that support interventions should be performed directly. Then, when the therapist and the patient come to a common understanding of the treatment process, depending on the type of case, ranging from expressive to supportive, and in addition to its own techniques, therapist uses more

components of the treatment according to the course of treatment. Basically, the goal is to reduce the symptoms, improve the overall performance of the person, help him adapt to the internal or external conditions, and increase the patient's self-esteem so that he/she can be in the best possible condition with the problems he/she hasand deal with the crisis and make good use of his/her abilities. At first, the treatment process will begin according to the patient's formulation and determination of his/her condition, and due to the chronicity of hemodialysis with the supportive spectrum. In this spectrum, the depressed patient should be encouraged to avoid isolation and to have appropriate social activity. Encouraging the patient to do physical activities such as exercise and daily bathing and tidying up and dressing regularly is one of the psychotherapeutic strategies in the supportive spectrum; but he/she should not be forced to engage in activities that are likely to fail due to poor concentration (18).

In the intermediate stage of treatment, understanding and supporting the patient as a corrective emotional experience will help him or her and then will get to the goals specifically. The final phase will begin if the patient feels that he or she no longer needs to work with a companion and is able to resolve the situation on his or her own. It is noteworthy that this process does not occur in different patients and clients in the same sessions, but due to the implementation of research and the need to complete the sessions in ten sessions, the therapist explains the process to the patients and addresses the most fundamental aspect expressed by them to determine the results for the purpose of conducting research and reporting. During this period of treatment, in parallel with the main issue, new goals may be created for the patients in areas such as life events or cases in their comparative performance which will be addressed immediately upon their request. At the end of the formal treatment, the results are summarized and the patient is instructed to continue the procedure and this treatment, as an organized set of courses, is done with a start, middle and an ending (19).

In cognitive-behavior method, the following was performed:

Session 1: Introduction about hemodialysis and its effect on life and psyche, introduction of cognitive-behavioral approach and description

of five components (thoughts, emotions, behavior, biology and environment) of the biological-psychological-social model of depression.

Session 2: Cognitive triangle (including thoughts, feelings, and behaviors) and showing the relationship between activities and mood, mood scoring, and excitement.

Session 3: Identifying self-effective thoughts and recording thoughts (the first two columns of the thoughts record sheet) - the concept of contentment and happiness and focusing on happy activities.

Session 4: Identifying cognitive distortions and mental preoccupation and interpreting self-talk as a relationship between situation and emotion.

Session 5: Replacing balanced thought, completing the first four columns of the thoughts record sheet.

Session 6: Understanding intermediate and fundamental beliefs, completing the seven columns of the thoughts record sheet and determining cognitive distortions.

Session 7: Modifying thoughts and beliefs - applying problem solving to modified thoughts - problem solving skills training.

Session 8: Balancing thought using past reconstruction techniques, testing thoughts.

Session 9: Behavioral activation, positive self-talk training and self-discipline in encouraging good behavior, anger management skills training.

Session 10: Displaying a continuous model of core and underlying beliefs and reviewing meetings (20).

Results

In the field of demographic characteristics in this study, the variables of age, level of education, socio-economic status and gender were considered. Regarding age, the average was 35 years and the standard deviation was 6.73. As for gender, an attempt was made to equal the number of men and women in each group but since each group had 15 members the number of men in each group was one more than women. In terms of education level, people are divided into 4 groups: illiterate, elementary, diploma and bachelor's degree of which diploma has the most frequency. Their socio-economic classification was also below the average level of society because most of them reported their income below normal.

Table 1. Descriptive characteristics of depression in the experimental and control groups

| Variable | Group | Pre-test | | Post-test | | Follow-up | | Short-term effect | Long-term effect |
		Average	Standard deviation	Average	Standard deviation	Average	Standard deviation	Average	Average
Depression	Supportive-expressive	32.24	10.64	16.73	7.66	13.40	5.7	-15.73	-19.07
	Cognitive-behavioral	32.20	11.17	22.27	8.28	21.53	7.9	-9.93	-10.67
	Control	31.40	8.07	33.13	10.07	-	-	+1.73	-

As seen in Table 1, the depression scores of 3 groups in pre-test phase had not significant differences and both types of treatment have significantly reduced depression in hemodialysis patients and the long-term effect showed that depression has continued to decline, and the rate of recovery has been higher than the short-term effect. However, the rate of improvement in cognitive-behavioral therapy is lower than in the supportive-expressive treatment group. In the control group, the rate of depression during the intervention increased slightly.

The results related to the analysis of the effectiveness of the interventions were presented in Tables 2 and 3.

Table 2. Analysis of the outcomes of psychological interventions

	Sources Change	SS	df	MS	F	Significance level	Effect
Effectiveness of the treatment	Pre-test	2400.95	1	2400.95	123.26	0.000	-
	Group	2296.7	2	1148.35	58.59	0.000	0.74
	Error	798.65	41	19.48			
	Total	5287.9	44				

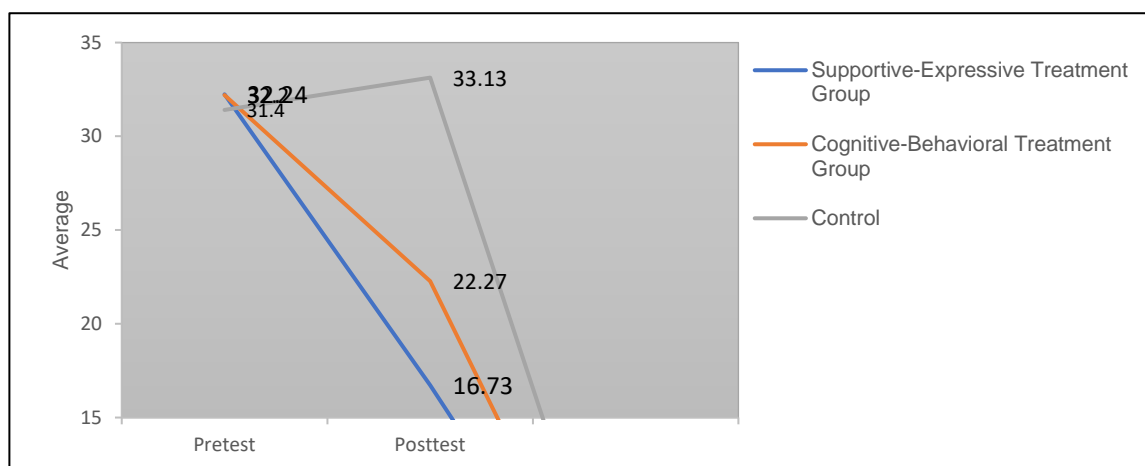Chart 1 shows the comparison between the groups in pre-test and post-test.

Chart 1. Comparison profiles of the mean depression of the experimental and control groups in the pre-test/post-test

Table 3. The variance analysis, comparison of short-term and long-term effectiveness of supportive-expressive therapy and cognitive-behavioral therapy

	Sources Change	SS	Df	MS	F	Significance level	Effect
Short-term effectiveness of treatment (reduction of symptoms)	Pre-test	1309.26	1	1309.26	75.12	0.000	-
	Group	243.68	1	243.68	13.98	0.001	0.34
	Error	470.6	27				
Long-term effectiveness or continuity of effectiveness (symptom control)	Pre-test	775.09	1	775.9	37.76	0.000	-
	Group	511.87	1	511.87	24.94	0.000	0.48
	Error	40.36	27				

According to the results of Table 2, the effect of the pre-test is significant, in other words, the pre-test performance has affected the post-test scores. Analysis of covariance shows that after eliminating the pre-test effect, psychological interventions of supportive-expressive therapy and cognitive-behavioral therapy have had a significant effect on reducing depression in hemodialysis patients. The results of Tukey HSD follow-up test showed that the differences between the experimental and control groups in supportive-expressive method and also in cognitive-behavioral method are significant. The difference between the mean score of the experimental and control group in supportive-expressive method was 17.47 (the difference between the pre-test score and the post-test score for each subject). Also, the difference between the mean of the experimental and control group in cognitive-behavioral method was 11.67 (the difference between the pre-test score and the post-test score for each subject). The follow-up test also showed that the difference between supportive-expressive treatment group and cognitive-behavioral treatment group was significant and supportive-expressive therapy reduces depression 5.8 points more than cognitive-behavioral therapy. According to the results of Table 3, pre-test has a significant role in comparison of the short-term effect of supportive-expressive therapy and cognitive-behavioral therapy,; this means that pre-test performance has affected post-test scores. Analysis of covariance shows that after eliminating the pre-test effect, supportive-expressive therapy is more effective than cognitive-behavioral therapy.

The performance of the groups during the intervention has been better demonstrated in the comparison profile of the means, and in general, in both short-term and long-term efficacy, both supportive-expressive and

cognitive-behavioral therapies have been successful. Chart 2 shows the comparison profile of mean score of depression between the first and second experimental groups in pre-test, post-test and follow-up phases.
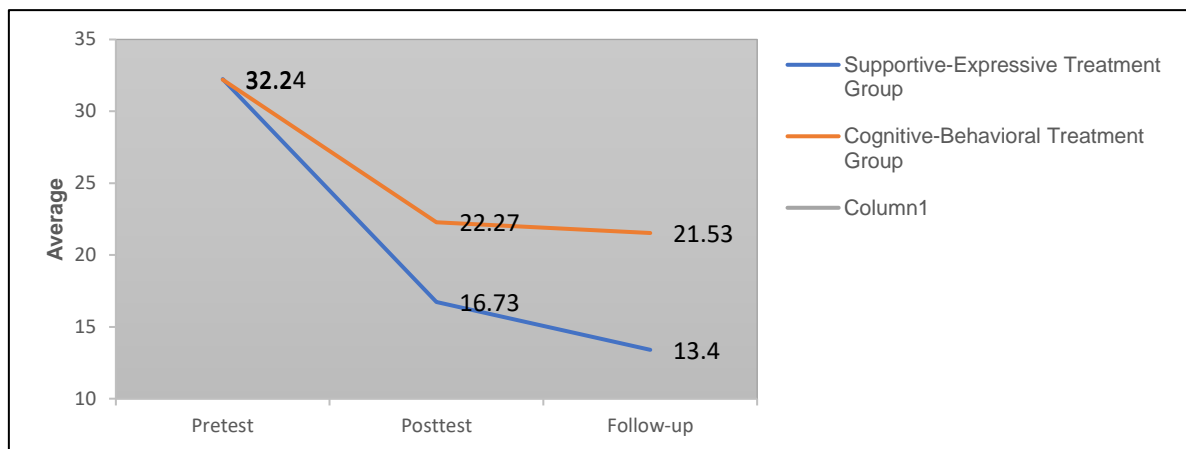

Chart 2. Comparison profile of mean score of depression between the first and second experimental groups in pre-test, post-test and follow-up

Discussion

The results of this study showed that both treatments (supportive-expressive and cognitive-behavioral therapy) reduced the depression scores significantly which continued during follow-up (4 months) while the difference between the mean score of controls in pre-test and post-test phases was not significant. The results of covariance analysis in comparing the short-term and long-term effectiveness of supportive-expressive therapy and cognitive-behavioral therapy also showed that these therapies were effective to reducing depression in hemodialysis patients, however supportive-expressive treatment has more short-term and long-term effects on reducing depression in hemodialysis patients than cognitive-behavioral treatment. According to the lack of the same study that assess this group of patients, we refer to some studies such as Erdley-Kass et al. study which evaluate the effect of problem solving therapy program on depression among patients with renal disease who receiving hemodialysis. The statistical population of this study consisted of patients aged 60 years or more.

Although there was not significant difference between two groups who received routine care and problem solving therapy, changes from baseline showed significant difference in depression scores based on Beck depression inventory (9).

This finding is concordant to the present study although the differences between interventional groups and control group are significant on our study. D'Onofrio et al. in a study entitled "quality of life, clinical consequences, personality, and coping in chronic hemodialysis patients" published in 2016, showed that integrated and multifunctional management was effective in improving the physical and mental components of patients undergoing dialysis treatment (12). Also, some studies assess the efficacy of supportive therapy in depressed out patients compared to cognitive behavioral therapy through Hamilton depression rating scale as same as the present study (21).

The above issues suggest supportive-expressive treatment as an effective method to reducing depression in patients with chronic illnesses. The present study also had limitations, such as the lack sociological studies in the country, the existence of legal issues and the need to observe it, which initially caused a great loss of time.

Also, the small number of studies conducted in this field at home and abroad, as well as the limited access to these resources, made it difficult for researchers to compare the findings of this study with other findings.

Conclusion

Based on the results it seems that supportive-expressive psychotherapy was more effective in improving hemodialysis patients' depression than cognitive-behavioral psychotherapy, and this issue highlights the importance of supportive-expressive psychotherapy in the treatment of depression for therapists.

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