ORIGINAL ARTICLE

Effectiveness of Group Psychotherapy by Cognitive-Behavior Therapy on Depression Treatment, Life Quality and Happiness among the Dialysis-Afflicted Women

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ABSTRACT
This study aimed at investigating the effectiveness of psychotherapy in cognitive-behavioral therapy on depression treatment, life quality and happiness among the dialysis-afflicted women. Research sample was selected in accessible method, in such a way that by attending Bushehr Kidney Patients Association, all dialysis-afflicted women who had high school and higher education were invited and then asked to complete the 13-item Beck depression Inventory. Then those with score higher than 5 were selected and were interviewed in the structured clinical form. After interviewing, 35 out of 70 women had the depression diagnosis criteria from among them 1, 3 and 1 persons were excluded from the study due to travel, lack of coordination between the meetings hours and their working hours and reluctance to continue the cooperation, respectively. At the end, 30 depression-afflicted persons were remained. These 30 women were divided into two control and experiment groups. Only experiment group was intervened. Finally, after applying the intervention on the experiment group, both groups passed post-test in research variables. at the end, data obtained from the research was analyzed by Multivariate analysis of covariance (MANCOVA) method. findings indicated that research intervention had been effective in reducing the depression sings, increasing the quality life and happiness.
Keywords: group psychotherapy, depression, life quality, happiness and dialysis-afflicted

INTRODUCTION
Kidney chronic diseases are diseases which not only endanger the physical health, but also other health dimensions and therefore it make comprehensive planning and patient's rehabilitation inevitable. Currently, if these patients do not receive the kidney successfully, they can be rescued from the early death by using novel medical methods including hemo-dialysis. In the meantime, they face a wide range of physical, mental, economic and social problems which influence their life quality and happiness as a whole.

Due to frequent dialysis, job, family and social settings of many persons change. These consequences can severely affect the quality life of patients and lead to their reduced mental quality which expose many dialysis-afflicted patients to depression. Kidney failure and its treatments cause main problems in the useful activities and interests of patient. Also, these problems have a significant relationship with quality life of these patients [2].

Physical damages and problems of dialysis-afflicted persons are frequent and consequences of this disease are troublous and long-lasting. There is a fact that proper adaptation with chronic and long-lasting disease is too much difficult and creates negative attitude toward the disease and make them stressed and depressed. Most patients feel insufficient in giving herself up medicine prescriptions. This affects negatively their temper and setting the blood glucoses [3].

This process is challenging as a solution for treating the kidney failure and resulting mental and spiritual pressure causes many social-mental problems in such patients. In the results of most studies, high prevalence of social-mental disorders is observed among the dialysis-afflicted persons. A brief glance at increasing tendency to suicide, depression and anxiety, sexual disorders and interpersonal relationships in dialysis-afflicted persons makes human astonished how these persons attempt to stay live [4].

There is no consensus on intensity of psychiatric effects among dialysis-afflicted persons, but everybody emphasizes on this mutual point that the most prevalent symptom of mental disease in these patients is depression and consequently anxiety with less prevalence [5]. Most studies carried out in Iran indicate the prevalence of mental problems, especially anxiety and depression among the dialysis-afflicted women [6]. Studies show that dialysis-afflicted patients are depressed [7].

Studies have shown that psychological issues are effective in dialysis-afflicted patients. Psychological trainings together with medical treatments are more effective and more stable than only using the medicine treatment among the dialysis-afflicted persons.

Psychological and group treatments including self-care training, problem solving ability, anger control and observing the appropriate diet have been effective in stable improvement of the dialysis-afflicted patients (Canadian Dialysis Association 5, 2008). One of the effective psychological methods in treating the dialysis is cognitive-behavioral therapy. Cognitive Behavior Therapy approach is focused on the cognitive distortions and attempt to change the behavior. Essence of cognitive behavior therapy is emotions and behaviors that have been formed by our thoughts and cognition. Therapist helps the patient to identify her cognitive distortions about the subjects related to the dialysis conditions and replace them with the more positive and realistic thought methods [3].

Researches have shown that within a group activity, the dialysis-afflicted persons learn what kind of methods they should select to obtain more positive and more stable changes as well as learn how the cognitive behavior-therapy can be effective on increasing the metabolic control, self-esteem and their life quality [8].

In regard to the aforementioned, the main issue that this research pursues is the effectiveness of cognitive behavior therapy on depression reduction, life quality and happiness of dialysis-afflicted women of Bushehr City and whether the cognitive behavior therapy can reduce the depression, life quality and happiness of dialysis-afflicted women of Bushehr City?

MATERIALS ANDMETHODS
Participant
Sample was selected in accessible method in such a way that by attending Bushehr Kidney Patients Association, all dialysis-afflicted women who had high school and higher education were invited and then asked to complete the 13-item Beck depression Inventory. Then those with score higher than 5 were selected and were interviewed in the structured clinical form. After interviewing, 35 out of 70 women had the depression diagnosis criteria from among them 1, 3 and 1 persons were excluded from the study due to travel, lack of coordination between the meetings hours and their working hours and reluctance to continue the cooperation, respectively. At the end, 30 depression-afflicted persons were remained. These 30 women were divided into two control and experiment groups.

Measures
In the present study, three questionnaires were used for collecting the data as below:
1. Beck depression Inventory (13-item version)
This questionnaire is the summarized version of 21-item version (Beck, 1961) [9] which was presented in 1972 [10] Content of questionnaire includes sadness, pessimism, frustration, unhappiness, guilt, self-hate, self-destructive, social resignation, indecision, self-image, job problem, fatigue and appetite. Each question has four choices to be answered for which the scores are 0, 1, 2 and 3. The person's score is the sum of all scores obtained from the questions [11].

For implementing this test, the subjects were asked to read the questions and choices of every question one by one and carefully. Then, she should select a choice for each question which expresses his current feeling better than the other choices; i.e. what she feels just at the time of test. Then she encircles the number before that choice. For calculating the results, the psychologist should sum all scores that the subject has encircled. Since in each question 3 is the highest, and number of items is 13, therefore, the maximum possible score is 39. Scores 0-4 (normal), 5-7 (mildly depressed), 8-15 (averagely depressed) and higher than 16 (acute depressed) are considered .

Reynolds and Gold [12] reported the reliability and internal similarity 0.83 for 13-item Beck depression Inventory.

2- Short version of the World Health Organization Quality of Life questionnaire (WHOQOL):

In this research, short version of the World Health Organization Quality of Life questionnaire (WHOQOL) (Assessment Group Of The World Health Organization Quality Of Life Questionnaire, 1998) has been used which includes four factors of physical health, mental health, social relationships and life environment influences. This questionnaire has been designed and developed after deleting and integrating some items of long version of WHOQOL-100 which includes 100 items.

This scale includes 24 items which is scored on the 5-degree Likert scale from 1 to 5 (1= Never, 2= little, 3=average, 4= high, 5=very high). Two other items (1 and 2) also exist which do not belong to any areas and they assess the life quality and health status as a whole (totally 26 items). Score range is within 24-120. High score shows the better life quality and low score indicate unfavorable life quality.

Hwang, Liang, Chiu and Lin investigated the reliability coefficients of this questionnaire by using Cronbach's Alpha on 1200 Taiwan citizens which were obtained 0.80, 0.81, 0.73 and 0.80 for subscales of physical health, mental health, social relationship and life environment influence, respectively, indicating the good reliability of this tool [13].

3- Oxford Happiness Questionnaire:

Oxford Happiness Questionnaire structured by Argil, Martin and Crossland was used for measuring the happiness. This questionnaire was designed and developed based on the Beck Depression Inventory (BDI) (Beck, Steer & Garbin) and measurement of mental health and personal happiness and it was again examined and corrected in 1995 [14]. This inventory includes 29 items which are scored in the 4-degree Likert scale from 0 to 3 (0=strongly disagree, 1=disagree, 2=agree, 3=strongly agree). Range of scores is within 0-87. High score indicates the high happiness and low score shows the lower happiness. Examples of the items of this inventory are: "I don't feel happiness" and "I'm happy too happy".

[14] reported the reliability coefficient of Oxford Happiness Questionnaire by using the Cronbach's Alpha, indicating a very good reliability for this tool.

RESULTS

In this section, mean, standard deviation, highest and lowest scores of subjects in depression, life quality and happiness in the sample are presented.

Table 1 shows mean and standard deviation, highest and lowest scores of depression in control and experiment groups both in pre- and post-tests.

Table 1, mean, standard deviation, highest and lowest scores of depression in subjects in control and experiment groups both in pre- and post-tests.

Lowest	Highest	No.	Standard deviation	Mean	Statistical indices	Stage
					Group	
5	18	15	4.08	11.4	Experiment	Pre-test
4	18	15	3.88	9.13	Control	
1	7	15	1.40	3.53	Experiment	Post-test
6	17	15	3.05	9.93	Control	

As shown in table 1, in experiment group, the mean for depression scores in pre-test and post-test are 11.40 and 3.53, respectively. Also, in the control group, the mean for depression scores in pre-test and post-test are 9.13 and 9.93, respectively. Significance of these findings is examined in the section related to the research hypotheses.

Table 2 shows that mean and standard deviation for scores of life quality in control and experiment groups both in pre- and post-tests.

Table 2, mean, standard deviation, highest and lowest scores of life quality in subjects of control and experiment groups both in pre- and post-tests

Lowest	Highest	No.	Standard deviation	Mean	Statistical indices	Stage
					Group	
64	15	7.56	74.60		Experiment	Pre-test
63	83	15	6.67	73.73	Control	
56	106	15	10.39	81.30	Experiment	Post-test
62	82	15	5.26	71.00	Control	

As shown in table 2, in experiment group, the mean for life quality scores in pre-test and post-test are 74.60 and 80.13, respectively. Also, in the control group, the mean for life quality scores in pre-test and post-test are 73.73 and 71, respectively. Significance of these findings is examined in the section related to the research hypotheses.

Table 3 shows that mean and standard deviation for happiness scores in control and experiment groups both in pre- and post-tests.

Table 3, mean, standard deviation, highest and lowest scores of happiness in control and experiment groups both in pre- and post-tests

Lowest	Highest	No.	Standard deviation	Mean	Statistical indices	Stage
					Group	
55	29	15	12.24	43.53	Experiment	Pre-test
60	16	15	15.00	45.66	Control	
83	35	15	15.56	61.73	Experiment	Post-test
63	16	15	15.18	42.60	Control	

As shown in table 3, in experiment group, the mean for happiness scores in pre-test and post-test are 43.53 and 61.73, respectively. Also, in the control group, the mean for happiness scores in pre-test and post-test are 45.66 and 42.60, respectively. Significance of these findings is examined in the section related to the research hypotheses.

In the current study, Multivariate analysis of covariance (MANCOVA) method was used for testing the hypotheses and determining the significance of the difference between experiment and control groups' scores in variables of depression, life quality and happiness. This was due to two dependent variables which necessitated the use of multivariate methods.

Hypothesis 1: Group psychotherapy by cognitive-behavior therapy leads to depression reduction, life quality improvement and happiness among the dialysis-afflicted women.

Table 5. Results obtained from MANCOVA method on the mean of post-test scores of depression, life quality and happiness among the subjects of experiment and control groups

Level of significance	Statistical power	Effect size	df error	df hypothesis	F	Value	Test name
0.001	1	0.75	25	3	32.65	0.68	Pillai Trace
0.001	1	0.75	25	3	32.65	0.34	Wilks' lambda
0.001	1	0.75	25	3	32.65	1.82	Hoteling's Trace
0.001	1	0.75	25	3	32.65	1.82	Roy's largest root

Table 5 indicates that there is a significant difference between experiment and control groups in terms of dependent variables in level $p = 0.001$. Therefore, hypothesis No.1 is accepted. Based on this, it can be said that there is a significant difference at least in one of dependent variables (depression, life quality and happiness) between two groups. In order to find out this, three covariance analyses was carried out in MANCOVA context of which the results are given in tables 6 and 7. Additionally, effect size index shows that 75% of difference between two groups is related to the experimental intervention. Statistical power is 1, i.e. possibility of second type error is zero.

Hypothesis 2: Group psychotherapy by cognitive-behavior therapy leads to depression reduction among the dialysis-afflicted women.

Table 6. Results obtained from the ANCOA analysis within MANCOVA context on the mean of post-test scores of depression of experiment and control groups

sig	Statistical power	Effect size	F	Mean of squares	df	Sum of squares	Change source	Variable
0.011	0.70	0.21	7.17	28.26	1	26.28	Pre-test	Depression
0.001	1	0.68	75.10	319.55	1	319.55	Group	
				4.65	26	109.12	Error	

In regard to table 6, in the column "significance level", it can be observed that that there is a significant difference between experiment and control groups in terms of variable of depression in level p = 0.001. Based on this, it can be said that hypothesis 1-1 is accepted. Additionally, effect size index shows that 68% of difference between two groups is related to the experimental intervention. Statistical power is 1, i.e. possibility of second type error is zero.

Hypothesis 3: Group psychotherapy by cognitive-behavior therapy leads to improvement of life quality of the dialysis-afflicted women.

Table 7. Results obtained from the ANCOA analysis within MANCOVA context on the mean of post-test scores of life quality of experiment and control groups

sig	Statistical power	Effect size	F	Mean of squares	df	Sum of squares	Change source	Variable
0.547	0.09	0.03	0.48	16.34	1	16.34	Pre-test	Life quality
0.002	1	0.24	8.04	421.1	1	421.1	Group	
				48.02	26	1125.01	Error	

In table 7, in the column "significance level", it can be observed that that there is a significant difference between experiment and control groups in terms of variable of life quality in level p = 0.002. As a result, hypothesis 1-2 is accepted. Additionally, effect size index shows that 24% of difference between two groups is related to the experimental intervention. Statistical power is 1, i.e. possibility of second type error is zero.
Hypothesis 4: Group psychotherapy by cognitive-behavior therapy leads to happiness of the dialysis-afflicted women.

Table 8, Results obtained from the ANCOA analysis within MANCOVA context on the mean of post-test scores of happiness of experiment and control groups

sig	Statistical power	Effect size	F	Mean of squares	df	Sum of squares	Change source	Variable
0.234	0.09	0.01	0.32	11.05	1	11.05	Pre-test	Happiness
0.011	1	0.32	6.12	256.1	1	256.1	Group	
				21.12	26	1025.23	Error	

In table 8, in the column "significance level", it can be observed that that there is a significant difference between experiment and control groups in terms of variable of happiness in level p = 0.011. As a result, hypothesis 1-3 is accepted. Additionally, effect size index shows that 32% of difference between two groups is related to the experimental intervention. Statistical power is 1, i.e. possibility of second type error is zero.

DISCUSSION AND CONCLUSION
The present study has been planned in order to investigate the effectiveness of group psychotherapy by cognitive-behavior therapy on depression treatment, life quality and happiness among the dialysis-afflicted women.
Hypothesis 1: Group psychotherapy by cognitive-behavior therapy leads to depression reduction, life quality improvement and happiness among the dialysis-afflicted women.
Results of this hypothesis are consistent with researches by Bastlar et al [15], Tesamparil and Siosiora [16], Wildermuth [3], Kigerng [17] and Petrak et al [18].
In line with the elaboration obtained from the results of this research, it can be dais that: cognitive-behavior therapy causes depression reduction and life quality improvement among the patients through training anger control, courageous behavior, problem solving skill, self-control issue and momentum control as well as training the relaxation.
Cognitive-behavior therapy increases the self-esteem and consequently the improvement of life quality through training confronting stress as well as increasing their adaptation and consistency with dialysis

disease. Also, cognitive-behavior therapy reduces the depression among the patients via challenging the negative thoughts, erroneous beliefs and training problem solving.

Hypothesis 2: Group psychotherapy by cognitive-behavior therapy leads to depression reduction among the dialysis-afflicted women.

The results of this research are consistent with the researches made by Fisher, Skaff, Mullan & Arean [19], Gonzalez, Perrot & Serpa [20], Brooks [21] and Whitton [22].

In line with the elaboration obtained from the results of this research, it can be dais that: thought system of depressed persons consists of his/her negative thoughts about self, current and future experience. Negative thoughts about self are: belief of depressed persons in their insufficiency and imperfection and since he believes in imperfection, then he believes that he never reaches the happiness. The negative thoughts of depressed persons on experience include their interpretations from the events which have been occurred for him. He assumes the negative obstacles as the impassable obstacles, even when there are more rational positive views on his/her experience.

He/she leans to the most negative possible interpretation on what has been occurred to him/her. Finally, the negative attitude of depressed persons is about the future of prostration. When he/she thinks of the future, he/she believes that the negative events occurring currently for him will continue in the future due to his/her personal deficiency [10]. In fact, behavior-cognitive therapy emphasizes on the negative tendency in information process in which a result of distortion in interpretations from self, environment and future which is related to the inconsistent beliefs motivated by the person. Most recent views support the model in which the relationship between nature of depression events and patients' interpretations of these events is focused. Behavior – cognitive technique reinforces planning for objectives and reduces the depression by challenging the negative thoughts [23].

Hypothesis 3: Group psychotherapy by cognitive-behavior therapy leads to improvement of life quality of the dialysis-afflicted women.

Results of this research are consistent with the studies by Faro [24], Grey, Boland & Tamborlane [25] and Cigrang [17].

In line with the elaboration obtained from the results of this research, it can be dais that: as the age goes up, the rate of diabetes chronic effects (eyesight reduction, high blood pressure, heart problems, etc). Studies have shown that the average time of afflicting with diabetes chronic effects was 10.5 years. Constant involvement in disease and limitations caused by the diabetes effects creates negative feelings and life unsatisfactory and as a result lowering life quality among the patients. Also, observing the diets and medicine regimes constantly creates insufficiency and independence among the patients which affects the life quality of patients (Faro, 1999). Diabetes is a chronic and long-lasting disease and always brings about stress and mental pressures and this matter makes the life quality of patients lowered. Cognitive – behavior therapy make training of adaptation with stress resulting from the disease possible by using the techniques for confronting the stress and this improves the life quality of patients [17].

Hypothesis 4: Group psychotherapy by cognitive-behavior therapy leads to happiness of the dialysis-afflicted women.

Results of this research are consistent with the studies by Wildermuth [3], Kigreng [17], Faro [24] and Grey [25].

In line with the elaboration obtained from the results of this research, it can be dais that: cognitive-behavior therapy attempts to include physical symptoms and physiological modes as well as factors such as cognitions, tempers, behavior and environmental conditions. Following the changes made in beliefs and attitudes of persons, changes are made in temper, behavior and their physiological aspects and they learn how to improve their health and activities related to them. As a result, their happiness level goes up. Cognitive-behavior therapy increases the happiness among the patients by training stress management through reducing the mental pressure and making the undesired emotions mild, training relaxation and controlling stress.

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