

Effect of hope therapy on depression, anxiety, and stress among the patients undergoing hemodialysis

Meisam Rahimipour¹, Nahid Shahgholian², Mohsen Yazdani³

ABSTRACT

Background: Renal failure is a major public health problem in the world. These patients experience high levels of psychological tension, anxiety, and depression, which leads to their lowered quality of life, increased health care costs, and early mortality. Due to medication side effects in these patients, non-medication methods are more in demand now. This study aimed to investigate the effect of hope therapy on depression, anxiety, and stress among the patients undergoing hemodialysis.

Materials and Methods: This is a clinical trial. Fifty patients undergoing hemodialysis were selected. Patients were assigned to two groups of hope therapy and placebo. Intervention of hope therapy was administered for 60–90 min during dialysis sessions once a week for eight sessions. In the placebo group, non-specific intervention was administered with the same number of sessions. Depression, Anxiety, and Stress scale (DASS)-21 questionnaire was completed at the end of the last session and 4 weeks later. Data were analyzed by paired *t*-test, repeated measures analysis of variance (ANOVA), and least significant difference (LSD) *post hoc* test through SPSS 18.

Results: There was a significant difference in mean scores of depression, anxiety, and stress in hope therapy group before, immediately after, and 1 month after intervention ($P < 0.05$), while there was no significant difference in mean scores of depression, anxiety, and stress before and immediately after intervention in the placebo group. Changes in mean scores of depression, anxiety, and stress were significantly higher in hope therapy group compared to placebo ($P < 0.05$).

Conclusions: The obtained results showed that hope therapy is effective on reduction of depression, anxiety, and stress.

Key words: Anxiety, depression, hemodialysis, hope, stressful events

INTRODUCTION

Patients with end-stage renal failure need kidney treatments to survive. Hemodialysis is one of the common treatments.^[1] Statistics show that there are around 1 million hemodialysis patients in the world,^[2] and this estimate was 18,000 in 2007^[3,4] and 20,000 in 2012 in Iran.^[5] During the recent three decades, investigations on the effect of psychological factors on the end-stage chronic renal failure patients have been increasingly conducted.^[6,7] As the process of hemodialysis often leads to patients' disability

and limits their everyday activities,^[8] it imposes on them high levels of mental tension, anxiety, and depression.^[9] These complications result in decreased quality of life (QOL), more hospitalizations, higher health care costs, and early mortality.^[7] Mollahadi *et al.*, in a study on comparison of stress, anxiety, and depression among hemodialysis patients and kidney transplant (KT) patients in Tehran, showed the levels of stress as 51.7% and 38.4% in hemodialysis and KT patients, respectively. This study shows that prevalence of stress was high both among hemodialysis and KT patients, although it was more among hemodialysis patients.^[10] Length of treatment and defective supportive system of the patients lead to patients' disability in coping with stressful situations and, consequently, higher anxiety, with a very high prevalence found among patients with physical diseases in such a way that their disease is always considered as a potential

¹Students Research Center, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, ²Department of Critical Care Nursing, Kidney Disease Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, ³Department of Psychiatry Nursing, Nursing and Midwifery Care Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

Address for correspondence: Ms. Shahgholian Nahid, Department of Critical Care Nursing, Kidney Disease Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran.
E-mail: shahgholian@nm.mui.ac.ir

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factor for secondary anxiety. This issue has been observed among hemodialysis patients, as various studies report the level of anxiety to be between 27 and 45.7% among these patients.^[11,12,13] The World Health Organization (WHO) has predicted that among non-communicable diseases, depression will be the second cause for disability by the year 2020.^[14] It is the fourth cause for mortality in the world.^[15] Statistics show that hemodialysis patients are involved in depression (about 20–70% in hemodialysis patients).^[13] It can be stated that depression is one of the most common psychological problems. Through time, mental disorders are increased in these patients due to a change in their lifestyle and reduced social function.^[16] Therefore, conducting the required interventions is essential to treat these patients. One of the methods of administering psychotherapy for these patients is hope therapy. Schneider *et al.* define hope as a cognitive process designed to declare the goals, follow them, detect a way to achieve them, empower the motivation, and follow-up the trend of achieving goals.^[17] As the number of medications used by these patients is high and these medications are mostly discharged from patients' kidneys, adding other medications to treat their mental complications can bring about new problems. Therefore, the need for finding non-medication methods for these patients is felt. The studies conducted on patients with multiple sclerosis (MS), type 2 diabetes mellitus, breast cancer, addicted females who are candidates for quitting, and the patients with chronic hypertension reveal the fact that hope therapy is effective in increasing the hope and decreasing the depression, anxiety, and stress signs resulting from chronic and non-communicable diseases. Meanwhile, the effect of hope therapy on hemodialysis patients has not been investigated.

As nurses, especially psychiatric nurses, are responsible for the mental care, in addition to the physical care of the patients,^[18] educating them of the methods to develop the mental health of patients is essential.^[19] Results of various studies on the efficacy of non-medication methods such as hope therapy show that it may be helpful to treat depression, anxiety, and stress among hemodialysis patients. Therefore, the present study was conducted to investigate the effect of hope therapy on depression, anxiety, and stress among the patients undergoing hemodialysis.

MATERIALS AND METHODS

This is a two-group, three-stage (before, immediately after, and 1 month after) clinical trial. The study population consisted of end-stage chronic renal failure patients who had an active and fixed medical profile in selected hospitals in Isfahan and were undergoing a 4-h hemodialysis session twice or three times a week.

The patients aged 18–65,^[20] with at least 3 months after their first hemodialysis and undergoing hemodialysis for

2–3 times a week,^[21] and had not taken any medications to control signs of depression, anxiety, and stress were entered in the study. The subjects who were not interested to stay in the research at any stage or with a change in their eligibility condition based on the inclusion criteria were excluded. At the first stage, 50 patients who met the inclusion criteria were selected and explained about the goal of study by the researcher. After obtaining an informed written consent from the subjects, the baseline information form was completed through referring to patients' files and questioning the clients. Then, their level of depression, anxiety, and stress was measured by Depression, Anxiety, and Stress scale (DASS)-21 questionnaire. At the second stage, the subjects were divided into two groups ($n = 25$ each) through random allocation. Mean scores of severity of the signs of depression, anxiety, and stress were separately calculated in each group. In the study group, hope therapy program was administered for 8 weeks once a week (each session lasted 1–1.5 h) by the researcher in the hemodialysis ward within the first 2 hours of hemodialysis for each patient. In the placebo group, an eight-session intervention was personally administered by the researcher's co-worker in conditions quite similar to the hope therapy group, in such a way that the patients were permitted to talk about their disease and problems and were listened to by the researcher's co-worker. The content of the sessions was as follows:

- In the first session, the researcher was introduced to the clients, greeted them, and made a treatment communication. Then, he explained about the structure of therapeutic sessions and the association between end-stage renal disease, hemodialysis, and psychological problems including stress, anxiety, and depression.

In the second session, the development of hope and its effect on stress, anxiety, and depression was discussed and its role in the trend of solving the problems and disorders was stated.

In the third session, clients' assignments were checked and problem-solving methods were developed among the clients, and they were asked to tell the story of their life. The clients were encouraged to notice their strong points to obtain hope. They were also helped to notice how hope has been formed, reduced, or remained steady in their life, and detect hope distractive behaviors. The clients finally noticed hope and identified it as a part of their psychological structure.

In the fourth session, clients' stories were stated and again categorized based on the main component of Schneider's hope therapy theory (goal, factor, and pathway). It was tried to detect hope-related cases in clients' life and the previous successes were considered to detect "the factors" and "the pathways."

In the fifth session, the clients were asked to prepare a list of their life current events and their important dimensions, and determine the level of their importance and their own satisfaction with them. The clients were also asked to state their totally hopeless experiences in life which were successfully solved.

In the sixth session, the characteristics of appropriate goals based on Schneider's theory were explained, and the clients were encouraged to set goals in each of their life domains. At this stage, the clients were helped to overcome the existing barriers to achieve their goal through increase of their physical and mental understanding.

In the seventh session, the characteristics of appropriate pathways were discussed, and the clients were asked to find appropriate strategies to achieve their goals. Then, they were taught to break the pathways to smaller pathways and determine a backup pathway for each of them to reach a positive self-report and body image to achieve their goals. Finally, they were educated to act as a hope therapist themselves and to apply hopeful thoughts in their everyday life, so as to be able to determine the goals and their barriers themselves. They learned to form and maintain the needed factors to achieve their goals and realize the needed pathways.^[22-24] At the end of 8 weeks, DASS-21 questionnaire was completed again immediately after intervention and subjects' scores of depression, anxiety, and stress were individually calculated. Four weeks after the end of the last session, the subjects were again investigated by DASS-21 questionnaire. Reliability of this questionnaire was calculated by Cronbach alpha (0.93) in another study.^[25] In a study conducted in Iran to calculate its validity in the Iranian population, 1070 male and female subjects completed the questionnaire. Reliability and validity of this scale were established by internal consistency, and factor analysis and criterion validity through simultaneous administration of Beck depression test, Zung anxiety test, and perceived tension test, respectively. Overall, the calculated reliability and validity were satisfactory and significant ($P < 0.001$). Correlation of DASS sub-scales was checked by Beck depression test (0.70) and Zung anxiety test (0.67), and DASS sub-scale was checked by perceived tension test (0.49). Based on the obtained results, DASS-21 was found to be eligible to be applied in psychological and clinical research.^[26] The *t*-test for independent groups, Cronbach alpha, Kaiser-Meyer-Olkin (KMO), Bartlett test, explorative factor analysis, and Pearson correlation coefficient tests were adopted to analyze the data. To investigate homogeneity of age and length of hemodialysis treatment, analysis of variance (ANOVA) was used, and for sex, marital status, and the cause of end-stage chronic renal disease, Chi-square test was used. Data were analyzed by paired *t*-test, repeated measures ANOVA, and least significant difference (LSD) *post hoc* test.

Ethical consideration

Participation in the study was voluntary and collected data was secretly and in the end of the study results was presented to the infertility centers as well as all of participants and infertility centers was appreciated.

RESULTS

The findings showed that subjects' mean (SD) age was 47.82 (15.12) years and length of treatment with hemodialysis was 32.8 (24.6) months. In each group, 48% were female and 52% were male. Statistical tests showed no significant difference in the frequency distribution of age, sex, length of hemodialysis, marital status, and the cause for chronic renal failure between the two groups ($P > 0.05$). Independent *t*-test showed no significant difference in the mean scores of depression, anxiety, and stress before intervention in the two groups of hope therapy and placebo, but there was a significant difference in the above-mentioned mean scores immediately after intervention and 1 month after intervention between the two groups ($P < 0.05$). Repeated measures ANOVA showed no significant difference in the mean scores of depression, anxiety, and stress in the placebo group before, immediately after, and 1 month after intervention ($P > 0.05$).

Meanwhile, there was a significant difference in the mean scores of depression, anxiety, and stress in hope therapy group before, immediately after, and 1 month after intervention ($P < 0.05$) [Table 1]. LSD *post hoc* test showed that mean scores of depression, anxiety, and stress were significantly less in the hope therapy group before, immediately after, and 1 month after intervention ($P < 0.05$) [Table 1]. LSD *post hoc* test showed that the mean scores of depression, anxiety, and stress were significantly less in hope therapy group immediately after and 1 month after intervention, compared to before intervention ($P < 0.05$), but there was no significant difference in the mean scores of depression, anxiety, and stress immediately after and 1 month after intervention ($P < 0.05$). Independent *t*-test showed that mean score changes of depression, anxiety, and stress were significantly higher in the hope therapy group compared to control ($P < 0.05$) [Table 1].

DISCUSSION

The findings of the study show that scores of depression, anxiety, and stress were significantly reduced after hope therapy, compared to before intervention. Billington *et al.* also showed that hope could reduce anxiety and depression in end-stage renal failure patients and, consequently, increase their QOL.^[27] Bijari *et al.* reported the effect of hope therapy on increase in life expectancy of the women with breast cancer.^[28] Renisian *et al.* also

Table 1: Comparison of mean scores of depression, anxiety, and stress in hope therapy and placebo groups before, immediately after, and 1 month after intervention

Variable	Time	Hope therapy		Placebo		Independent t-test		
		Mean	SD	Mean	SD	t	P	
Depression	Before	13.36	3	13.64	3.5	0.3	0.76	
	Immediately after	3.64	2	14.04	3.5	12.75	<0.001	
	One month after	3.52	1.7	14.28	3.5	13.83	<0.001	
	Repeated measure ANOVA							
	F	184.43		5.35				
	P	<0.001		0.012				
Anxiety	Before	12.16	3.8	12.76	3.7	0.57	0.57	
	Immediately after	3.12	1.5	12.84	3.7	12.31	<0.001	
	One month after	3.32	1.7	12.84	3.6	12.04	<0.001	
	Repeated measure ANOVA							
	F	128.92		1				
	P	<0.001		0.383	3.9			
Stress	Before	12.72	3.6	13.16	4	0.42	0.68	
	Immediately after	3.88	2	13.76	3.8	11.12	<0.001	
	One month after	4	2.1	13.68		11.08	<0.001	
	Repeated measure ANOVA							
	F	179.40		6.35				
	P	<0.001		0.025				

showed that education of hope therapy could play a major role in reduction of depression and prevention of returning of drug abusers to drugs among the women seeking treatment.^[29] Mehmet and Rosin showed that hope is something that can be learned and acts as a barrier against relapse of depression through making positive emotions.^[30] Rasouli *et al.* also showed that hope therapy could have notable effects on the QOL of MS patients.^[31] Cheavens *et al.* reported that hope therapy is one of the strong and effective methods to fight with and overcome anxiety and depression, and those who are either highly hopeful or gradually get hopeful have more knowledge about health issues, types and severity of stress, etc., compared to those with lower level of hope. They also have better self-care and fight with the disease more efficiently.^[32] Field *et al.* reported the effect of hope therapy on an increase in awareness, mental health, and strategies to cope with problems.^[33] Sedehi *et al.* also showed that hope therapy was effective on reduction of anxiety, depression, and increase of QOL among MS patients.^[34] Rustoen *et al.* stated that hope therapy was effective in reducing mental stress among oncology patients and that the effect of hope therapy remained for 3–12 months after intervention. They reported that 95% of the clients claimed that their hope therapy was effective and reduced their stress.^[35] Shekarabi *et al.*, in a study on the effect of group hope therapy on hope and depression of the mothers with cancer children showed that theory

of hope therapy was effective on mothers' increase of hope and reduction of their depression.^[36] Sajadi *et al.* showed the positive effect of group hope therapy on reduction of students' depression and increase of their hopefulness.^[37] Alaedini *et al.* showed that hope therapy had an impressive role in reducing female university students' anxiety and insomnia.^[22] Billington *et al.* showed that hope, as an independent variable in patients, could have a notable effect on their anxiety, depression, mental health, and QOL.^[38] Cheavens *et al.* showed that group hope therapy was effective on hope, operant thinking, meaning of life, body esteem, and signs of depression and anxiety.^[39] Ghezselflo *et al.* showed that group therapy, based on hope therapy, played a key role in improvement of male AIDS patients' QOL.^[40] As many people who feel their life is not satisfactory and seek for an improvement in their life conditions are at risk of chronic mental diseases, interventions such as hope therapy can lessen this risk. Hope therapy is of great importance as it is based on a positive psychological approach instead of focusing on human beings' weaknesses. It also considers individuals' abilities.^[24] Individuals with a high level of hope can protect themselves against depression and anxiety and are less likely to experience depression and anxiety again. These individuals have a more realistic goal and melt away hopelessness that ruins their confidence. Consequently, they are more resistant against negative events. On the other hand, hope is a sort of feeling magnifying the

possibility of any pleasant behavior or event in future. Reduction of the patients' signs can prevent frequent hospitalizations and extra high economic, social, and mental burden imposed to these patients, their families, and the society.^[1] Therefore, by administration of hope therapy, an efficient step can be paved toward this goal. As the present study investigated the patients' signs just by one questionnaire and detected the longevity of hope therapy effects until 1 month, conducting further studies with a higher number of subjects and investigation of the subjects' signs by various questionnaires as well as following up these patients regarding the effects of hope therapy 3, 6, and 12 months after intervention are suggested.

CONCLUSION

Based on the above-mentioned results, it can be concluded that hope therapy can reduce depression, anxiety, and stress in these patients. They choose accessible points in life and be more happy. It is suggested to conduct a study on dialysis patients with longer follow up time and check maintenance effect of hope therapy.

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