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The importance of art therapy in the quality of life in hemodialysis patients

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Abstract. *Dialysis causes many psycho-social problems in patients with chronic renal failure and decreases their quality of life by increasing their anxiety. We aimed to determine the influence of artistic activities on quality of life and reducing or eliminating dialysis anxiety.*

Methods. *Among 180 hemodialysis patients, 8 patients were randomly selected as a study group and 8 patients as a control group. We performed our theater rehearsals in 16 sessions, two hours per week. State-Trait Anxiety Inventory (STAI), STAI and Social Anxiety Scales (SAS) were employed in both groups before and after the play.*

Results. *The means of the eighth-month SAS fear and avoidance measures of the study group were found to be significantly lower than the control group and significantly lower than the baseline.*

The mean difference of the initial eighth-month SAS fear and avoidance in the study group was statistically significantly higher than the control group.

Initial and eighth month SAS fear and avoidance difference averages of the study group were found statistically significantly higher than the control group.

Conclusions. *We determined that the therapies to be done with art have an important place in relieving or reducing anxiety in hemodialysis patients. In addition, it was the opinion that our patients would make positive contributions to their quality of life. However, further studies are needed to demonstrate whether theater rehearsals reduce anxiety in hemodialysis patients.*

Keywords: *hemodialysis, anxiety, art therapy.*

Conflict of interest statement. The authors declare no competing interest.

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Важливість арт-терапії у якості життя пацієнтів, які лікуються методом гемодіалізу

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Резюме. Лікування гемодіалізом викликає низку психо-соціальних проблем та знижує якість життя пацієнтів з хронічною хворобою нирок ВД. Метою нашої роботи було визначити вплив художньої діяльності на якість життя та зменшення або усунення тривоги при діалізі.

Методи. Серед 180 хворих, які лікувались методом гемодіалізу у нашому центрі, 8 пацієнтів були рандомізовані до дослідницької групи, 8 – до контрольної групи. Ми проводили театральні репетиції у 16 сеансах, дві години на тиждень. Репетиціями театру керував професійний театральний режисер. Під час репетицій пацієнтам надавалась підтримка психолога. Для аналізу впливу арт-терапії на якість життя пацієнтів використовували опитувальники State-Trait Anxiety Inventory (STAI), STAIІ та Social Anxiety Scales (SAS) до та після вистави.

Результати. Встановлено, що середні показники тривожності через 8 місяців арт-терапії у досліджуваній групі були значно нижчими, ніж у контрольній групі і значно нижчими ніж вихідні.

Висновки. Арт-терапія відіграє важливе місце у полегшенні або зменшенні тривожності та має позитивний внесок у якість життя пацієнтів, які лікуються методом гемодіалізу. Подальші дослідження необхідні для визначення впливу театральних репетицій на зменшення тривожності та покращення якості життя хворих на гемодіалізі.

Ключові слова: гемодіаліз, тривожність, арт-терапія.

Introduction. Chronic kidney disease (CKD) is considered an important global public health problem. In its final stage, it requires some form of kidney replacement therapy, hemodialysis is the most commonly used treatment modality [1, 2]. Hemodialysis is a difficult and time-consuming treatment that requires patients to go to the hospital three times a week for about 4 hours each time [3]. Patients with end-stage renal failure experience difficult symptoms that can deeply affect their quality of life, such as fatigue, pruritis, pain, nausea, sexual dysfunction and muscle weakness [4]. The entire treatment process is experienced as having challenging physical, social and emotional limitations [5]. The limitations caused by CKD frequently cause psychosocial problems such as depression, stress and anxiety in dialysis patients [6]. Poor health-related quality of life is associated with increased morbidity and mortality [7]. Patients receiving hemodialysis have higher anxiety and depression rates, about 20-50% of them experience depression and/or anxiety [8]. Depression is an independent predictor of mortality in hemodialysis patients and can lead to poor treatment compliance, incompatible health behavior, self-harm, and increased risk of suicide [9, 10]. Depression is a contributing fac-

tor to non-compliance in patients receiving hemodialysis. Anxiety can also have an impact on the physical health of patients receiving hemodialysis because anxiety symptoms have a significant relationship with the performance status [11, 12]. Therefore, both anxiety and depression symptoms have a potential impact on physical well-being. Many symptoms of depression and anxiety, such as anorexia, sleep disturbance, and sexual dysfunction, are the same as uremia symptoms, making it difficult to distinguish anxiety or depression from the clinical picture of end-stage kidney disease [13]. There are many strategies to improve these symptoms, including non-pharmacological interventions such as art therapy, systemic acupuncture and music therapy. Art is an effective tool to enhance self-expression, creativity and self-esteem in chronic diseases. For instance, music therapy is safe and inexpensive and has been shown to improve pain and anxiety associated with a variety of diseases [14, 15]. The application of art in health has attracted attention recently due to its potential to improve patient outcomes and reduce the costs of the National Health Service. [16] There have been no randomized controlled studies on non-music art therapies for patients with end-stage renal disease receiving hemodialysis [3]. In art-based intervention researches, the methodology should be considered due to the lack of randomized control trials conducted using non-music interventions [17]. Acting is another branch of art, which may help subjects to explore and express their feelings, cope with stress and improve social skills.

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Mental and emotional well-being is very closely related to physical wellness. Participating in such group activities enable socialization, communication and discovering one's identity.

Aim. Our study was planned to evaluate the effects of theater rehearsals on anxiety in selected hemodialysis patients.

Patients and Methods. Among our 180 hemodialysis patients, 8 patients (4 women and 4 men) were randomly selected as a study group and another 8 patients (4 women and 4 men) were chosen as the control group for the present study.

We performed our theater rehearsals in 16 sessions, two hours a week. The procedures followed were in accordance with the ethical standards of our hospital and with the amended Declaration of Helsinki. Written informed consent was obtained from subjects. Theater rehearsals

were directed by a professional theater director. Psychologist support was also provided to the patients during the theater rehearsals. State-Trait Anxiety Inventory (STAI-1, STAI-2) and Liebowitz Social Anxiety Scalasi (LSAS) were employed to the study and control groups before and after the play [18, 19]. The demographic characteristics of the patients (age, disease duration, dialysis duration, gender, occupation, marital status, education, smoking, alcohol) were recorded. The STAI instrument consists of two subscales (status and continuous). Each of these subscales is composed of 20 questions with Likert-type response options, as follows: 1-almost never; 2-sometimes; 3-often; 4-almost always. The score varies from 20-80 points, with higher scores indicating higher levels of anxiety, which may indicate trait of state anxiety in low (0-34), moderate (35-49), high (50-64), and very high (65-80) grade (Fig. 1a and 1b).

SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

Please provide the following information:

Name _____ Date _____ S _____
 Age _____ Gender (Circle) M F T _____

DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

		NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm.....	1	2	3	4	
2. I feel secure	1	2	3	4	
3. I am tense	1	2	3	4	
4. I feel strained	1	2	3	4	
5. I feel at ease	1	2	3	4	
6. I feel upset	1	2	3	4	
7. I am presently worrying over possible misfortunes	1	2	3	4	
8. I feel satisfied	1	2	3	4	
9. I feel frightened	1	2	3	4	
10. I feel comfortable	1	2	3	4	
11. I feel self-confident.....	1	2	3	4	
12. I feel nervous	1	2	3	4	
13. I am jittery	1	2	3	4	
14. I feel indecisive.....	1	2	3	4	
15. I am relaxed	1	2	3	4	
16. I feel content	1	2	3	4	
17. I am worried	1	2	3	4	
18. I feel confused.....	1	2	3	4	
19. I feel steady.....	1	2	3	4	
20. I feel pleasant.....	1	2	3	4	

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STAI-AD Test Form Y
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SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name _____ Date _____

DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant.....	1	2	3	4
22. I feel nervous and restless	1	2	3	4
23. I feel satisfied with myself.....	1	2	3	4
24. I wish I could be as happy as others seem to be.....	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool, and collected".....	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them.....	1	2	3	4
29. I worry too much over something that really doesn't matter.....	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence.....	1	2	3	4
33. I feel secure	1	2	3	4
34. I make decisions easily	1	2	3	4
35. I feel inadequate.....	1	2	3	4
36. I am content	1	2	3	4
37. Some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind.....	1	2	3	4
39. I am a steady person.....	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

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Fig. 1. Self-evaluation questionnaire which was used in the study:
(a) State-Trait Anxiety Inventory-1, (b) State-Trait Anxiety Inventory-2.

The Liebowitz (SAS) is a clinician-rating scale created to assess social phobia. The LSAS assesses the range of social interaction and performance situations that patients with social phobia fear and/or avoid. The scale includes 24 items divided into two subscales that evaluate social interactional and performance situations: fear: 0-none, 1-mild, 2-moderate, 3-severe, avoidance 0-none, 1-mild, 2-moderate, 3-severe. The scoring scale: (the sum of fear and avoidance scores) 0-29 you do not suffer from social anxiety, 30-49 mild social anxiety, 50-64 moderate social anxiety, 65-79 marked social anxiety, 80-94 severe social anxiety, >95 very severe social anxiety.

Statistical analysis was done with NCSS 2007 package program. Besides descriptive analyses (mean, standard deviation), Mann-Whitney-U and Chi-square tests were used to compare two groups. Wilcoxon test was used to compare SAS and STAI 1-2 scores at baseline and after 8 months. The results were considered significant if the p-value <0.05.

Results. The study and control groups consisted of 8 hemodialysis patients each. There was no statistically significant difference between the study and control groups concerning the mean age, disease duration, dialysis duration (Table 1).

Table 1

The comparison of study and control groups with respect to age, disease duration and dialysis duration

	Study Group	Control Group	MW	P
Age	43.8 ± 14.8	49.8 ± 15.8	23	0.34
Disease duration	28.4 ± 14.5	39.7 ± 16.7	22	0.29
Dialysis duration	11 ± 5.37	8.06 ± 4.81	22	0.29

No statistically significant difference was observed between the gender of the study and control groups, professional marital status, educational status, smoking and alcohol use (Table 2).

Table 2

The comparison of the study and control groups in terms of gender, occupation, marital status, education and habits

		Study Group		Control Group		
Gender	Male	4	50,0%	3	37,5%	$\chi^2:0,254$ p=0,614
	Female	4	50,0%	5	62,5%	
Occupation	Worker	2	25,0%	1	12,5%	$\chi^2:2,28$ p=0,319
	Retired	2	25,0%	5	62,5%	
	Unemployed	4	50,0%	2	25,0%	
Marital status	Married	3	37,5%	4	50,0%	$\chi^2:0,291$ p=0,867
	Single	4	50,0%	3	37,5%	
	Widow	1	12,5%	1	12,5%	
Education	Primary school	6	75,0%	5	62,5%	$\chi^2:0,291$ p=0,590
	High school	2	25,0%	3	37,5%	
Smoking	No	8	100,0%	7	87,5%	$\chi^2:1,06$ p=0,302
	Yes	0	0,0%	1	12,5%	
Alcohol	No	7	87,5%	8	100,0%	$\chi^2:1,06$ p=0,302
	Yes	1	12,5%	0	0,0%	

The differences in the studied parameters between the groups are presented in Table 3.

Table 3

The comparison of the study and control groups in terms of SAS fear and avoidance and STAI status and continuity at the end of the study

		Study Group	Control Group	MW	p
SAS fear	Initial	11.75 ± 4.33	15.75 ± 3.15	13.5	0.058
	8th month	8.75 ± 2.32	17.88 ± 6.2	3	0.002
	Z	-2.19	-1.35		
	P	0.028	0.176		
SAS Avoidance	Initial	11.13 ± 4.39	14 ± 4.54	22	0.290
	8th month	4.63 ± 2.26	13.25 ± 3.66	1.5	0.001
	Z	-2.54	-1.2		
	P	0.011	0.230		
STAI-1 Status	Initial	40.38 ± 5.01	46 ± 9.13	19.5	0.188
	8th month	51.37 ± 5.55	42 ± 3.16	4	0.003
	Z	-2.52	-1.05		
	P	0.012	0.293		
STAI-2 Continuous	Initial	47.37 ± 8.25	44.63 ± 10.93	24.5	0.431
	8th month	48.88 ± 4.64	46.37 ± 2.77	21.5	0.267
	Z	-0.77	-1.02		
	P	0.440	0.310		

No statistically significant difference was observed between the STAI-2 continuous averages in the study and control groups (Fig. 2).

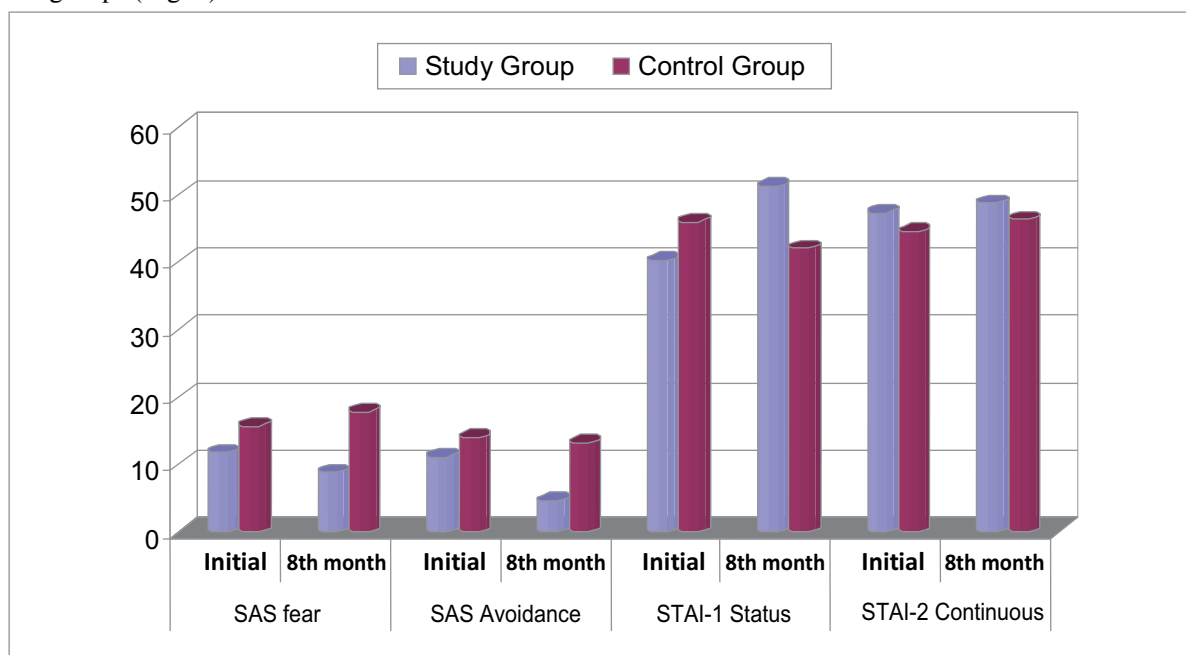


Fig. 2. The comparison of the study and control groups in research dynamics.

Discussion. In addition to pharmacological treatments, nonpharmacological supportive treatments such as music studies have been used to reduce anxiety in hemodialysis patients. Our study was planned to investigate the effects of theater, an important art branch, on anxiety in the hemodialysis patients. As far as we know, there is no similar study in the literature. Persuading dialysis patients to take role in theatre plays to overcome social phobia and anxiety has not been previously reported. The results presented here give preliminary indications of the effectiveness of theater rehearsals intervention in reducing the mean scores in state anxiety in patients undergoing hemodialysis. These results show that theater rehearsals significantly reduced perceived anxiety levels in hemodialysis patients.

Authors believe that higher levels of anxiety in the patients undergoing hemodialysis can be explained by the fact that they need to stay connected to the machine for several hours a week, limiting their independence, keeping a restricted diet and not being able to travel for a long time [20, 21].

These results are consistent with the results of the study examining nonpharmacological supportive therapies such as listening to music, which reduces anxiety in hemodialysis patients [22, 23].

In our study, it was seen that there was a statistically significant difference in the fear and avoidance of SAS in the study group and the STAI status in the study group with theater rehearsals. According to these results, performing theater rehearsals helped the patients to face the fact that hemodialysis is obligatory and lead to reduce their anxiety. Therefore, in the group of patients who do not wish to continue hemodialysis treat-

ment, providing non-pharmacological support treatments as well as pharmacological support treatments can contribute positively to hemodialysis compliance by reducing anxiety.

Limitations. Some limitations need to be mentioned. The study population was small and the study was conducted in a single renal replacement therapy clinic. The study comes from a single province of the country and therefore does not reflect the findings of other parts of Turkey. We suggest further multicenter studies in different regions of the country. Another limitation is that the clinical importance of acting and its influence on clinical symptoms have not been evaluated. In art-based intervention research, the methodology should be considered due to the lack of RCTs conducted using non-music interventions [24].

Conclusions. As a result, we determined that art treatments have an important place and importance in relieving or reducing anxiety of hemodialysis patients. Art also contributes positively to the quality of life. We recommend such motivating activities to other dialysis centers. However, further studies are needed to demonstrate whether theater rehearsals reduce anxiety in hemodialysis patients.

Conflict of interest statement. The authors declare no competing interest.

Authors Contributions.

Ergün Parmaksız: Writing the manuscript, data collection and research management;

Hüseyin Demirbilek: Data collection and clinical data analysis.

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