



## Original Article

# Assessment of the mental status of patients with chronic kidney disease

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### Abstract

**Objectives:** This descriptive study aims to assess the mental status of patients with chronic kidney disease.

**Methods:** The study population was patients hospitalized in the Nephrology and Hypertension service of a training hospital in İstanbul, Turkey (n=800). The sample of the study consisted of 120 patients with chronic kidney disease who met the inclusion criteria with 95% confidence and 90% power. Data were collected between January and June 2007 using the "Brief Symptom Inventory (BSI)" consisting of 53 items and the "Information Form" prepared by the researcher based on the literature.

**Results:** Of the patients, 52.5% were male, the mean age was 55.61±17.40 years and the mean duration of treatment was 85.31±81.04 months. The sociodemographic characteristics of the patients with no public insurance, who were separated from their partner and had weak family relationships following the illness, had higher scores in the psychological symptom indices. A statistically significant difference was found in at least one of the psychiatric symptom sections. During the illness, the scores of psychological symptom indices were found to be high in areas such as body image and self-esteem, sexual problems related to illness, social isolation and being dependent on the hospital. Statistically significant differences were also found in various psychological symptoms. Additionally, those who did not accept their illness, who had not received information about their illness and those who had a sense of loneliness, were found to have high scores on their mental disorders.

**Conclusion:** The study recommended that psychiatric evaluations be started with the onset of the chronic renal failure (CRF) diagnosis and that patients and their families be evaluated together and given information about the treatment and disease process. Patients identified as high risk should be evaluated by the consulting liaison psychiatric nurse.

**Keywords:** Chronic kidney disease; consultation liaison psychiatric nurse; mental status; psychiatric sign.

CRF is a progressive and irreversible decline in kidney function based on chronic renal or systemic diseases. Patients in end-stage renal disease (ESRD) must continue one of the treatments of hemodialysis (HD), peritoneal dialysis (PD) or transplantation<sup>[1,2]</sup> for survival. More than two million people worldwide currently receive dialysis treatment or transplantation due to ESRD.<sup>[3]</sup> Joint data from the Ministry of Health of the Republic of Turkey and the Turkish Society of Nephrology (2017) shows that of the patients who receive ESRD treatment, 76.12% receive HD, 4.71% receive PD and 19.17% receive kid-

ney transplantation. There are currently 56,687 HD and 3,508 PD patients, and as of the end of 2016 there are 14,208 patients who have survived with functional kidney graft.<sup>[4]</sup> The most commonly used treatment in Turkey and around the world for the ESRD is HD.<sup>[4,5]</sup>

Patients in ESRD depend on a dialysis machine and/or a process. Moreover, they encounter problems such as fluid restrictions, ongoing medication use, continuous, lengthy treatments during the day, changes in physical appearance due to the treatment and sexual problems.<sup>[6,7]</sup> This leads to psychoso-

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**What is known on this subject?**

- Previous studies have found that the prevalence of mental disorders and illness has increased among patients who are maintained on dialysis treatment due to CRF.

**What is the contribution of this paper?**

- This study found that there were no differences between the mental status of patients with CRF who had been receiving hemodialysis or peritoneal dialysis and those who had not started dialysis treatment (patients only receiving medication and dietary treatments). The study also found that in addition to sociodemographic characteristics of the patients; perceived problems related to the disease, emotions, thoughts and ideas regarding the disease, and the status of receiving information about the disease affected mental status.

**What is its contribution to the practice?**

- The results of this study illustrated that psychosocial assessments should be administered on patients diagnosed with CRF assessing sociodemographic data such as support systems, public insurance and patients' emotions, thoughts and ideas.

cial problems arising from job loss, health and income problems, body image and self-respect.<sup>[8]</sup> Patients also encounter dependency and death issues along with the compliance difficulties based on the restrictive treatments.<sup>[7,9]</sup> Previous studies have found that psychological disorders are widespread among dialysis patients and the rate of depressive disorders varied between 22.6% and 54.1% similar to anxiety disorder.<sup>[10-12]</sup> Studies have also determined that 21.5% of the patients had suicidal ideation.<sup>[13]</sup> Another study has found that 46.6% of ESRD patients had psychiatric disorders.<sup>[14]</sup> The study by Cukor et al.<sup>[15]</sup> (2014) which was conducted with ESRD patients has reported that the existence of psychological disorders decreased the quality of life and treatment compliance of the patients, and increased the mortality and treatment costs.

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Patients in ESRD depend on a dialysis machine and/or a process. Moreover, they encounter problems such as fluid restrictions, ongoing medication use, continuous, lengthy treatments during the day, changes in physical appearance due to the treatment and sexual problems.<sup>[6,7]</sup> This leads to psychosocial problems arising from job loss, health and income problems, body image and self-respect.<sup>[8]</sup> Patients also encounter dependency and death issues along with the compliance difficulties based on the restrictive treatments.<sup>[7,9]</sup> Previous studies have found that psychological disorders are widespread

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Disease and treatment modes are factors that affect psychological disorders encountered in dialysis patients.<sup>[12-14]</sup> Although there are studies in the literature that have examined whether there was a difference in the prevalence of psychological disorders in terms of the dialysis type administered (HD or PD), there is no study that compared the patient group who did not begin dialysis treatment and the dialysis group.

This study was carried out to compare the mental statuses of patient groups who receive medication and dietary treatments to manage CRF and those who receive dialysis treatment. This study will determine the sociodemographic characteristics that may affect the mental status of patients with CRF, perceived problems based on the disease and emotions, and thoughts and ideas regarding the disease. The data obtained from this study will help in early recognition of high risk individuals in terms of psychological disorders and guidance for treatment. Nurses play a key role in assisting patients and their families with a chronic disease to increase their self-sufficiency,<sup>[16]</sup> perform physical and psychosocial assessments of patients, and organize protective and rehabilitative activities by determining risks.<sup>[17]</sup>

## Materials and Method

### The Study Type

This was conducted as a descriptive study.

### The Population and Sample of the Study

This study was carried out between February and June, 2007. The population of the study included 800 patients diagnosed with CRF who were receiving inpatient or outpatient treatment in the Nephrology and Hypertension service of a training and research hospital.

The study sample included 120 out of 800 patients who were diagnosed with CRF and met the inclusion criteria with 95% confidence and 90% power measured using the  $n=Nt2pq/d2$  ( $N-1$ )+ $t2pq$  formula. The sample included those who agreed to participate and had the ability to represent the study population.

### The Inclusion Criteria of the Study

- Diagnose of CRF; however, had not begun to receive dialysis treatment or proceed with one of the dialysis treatments,
- Age 18 years or older
- No diagnose of a psychiatric disorder
- Agreeing to participate in the study.

### Data Collection Tools

Data were collected using an Information Form about the sociodemographic, family, disease-and-treatment related characteristics of the patients with CRF and the Brief Symptom Inventory (BSI) which was used to assess the mental status of patients. The Information Form and the BSI were completed through face-to-face interviews with the patients.

*The Information Form:* The form was created by the researcher based on the literature and submitted for expert opinion review. The information form consisted of open-and-close-ended questions that assessed sociodemographic variables such as age, sex, marital status, education level, public insurance. Additional information obtained was the type of treatment for the illness, difficulties related to the illness, affective responses about the treatment stage, and how family relations were affected by the illness.

*The Brief Symptom Inventory:* The BSI was a Likert type inventory that consisted of 53 items which were selected from the 90 items on the Symptom Check-List 90R (SCL-90R) developed by Derogatis (1992) and was scored between 0 and 4. The inventory was used to determine various psychological symptoms and had nine subscales including Somatization (S), Obsessive Compulsiveness (OBS), Interpersonal Sensitivity (IS), Depression (D), Anxiety (A), Hostility (H), Phobic Anxiety (PA), Paranoid Ideation (PI) and Psychoticism (P). The Additional Items (AI) included items about eating disorders, sleep disorders, and thoughts about death and guilt. Whether the mental disorders were at a pathological level were assessed based on the Global Severity Index (GSI). A GSI score higher than 1.0 indicated the existence of a pathological status and a score lower than 1.0 indicated that the disorder was not at a pathological level. The Turkish validity and reliability study of the inventory was carried out by Nesrin Hisli Şahin and Ayşegül Durak<sup>[18]</sup> (1994). The Cronbach's alpha internal consistency coefficient of the Turkish inventory was between 0.71 and 0.85.

The Cronbach's alpha coefficient of the present study was found as 0.93. Coefficients of the subscales varied between 0.41 and 0.84.

### The Limitations of the Study

The data of the study belonged to the study group, therefore cannot be generalized. Additionally, the study was conducted in a single hospital and was a cross-sectional analysis.

### Statistical Analysis

The data obtained from the study was assessed digitally and statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) for Windows 13.0 program. The statistical data analysis was carried out with the assistance of a statistics expert. The descriptive statistics (frequency scoring, percentages) along with the ANOVA (post hoc: Bonferroni), t test, Kruskal Wallis Variance Analysis, Mann-Whitney U tests were used to analyze the study data after the normal distribution of the statistical significance of various distributions of patients tested. The Cronbach's alpha coefficient was used for the reliability of the inventory. The results were assessed at 95% confidence interval and  $p < 0.05$  significance level.

### Approvals

The institution where the study was to be conducted gave approval numbered 530-8-07 and dated 01.10.2007. No ethical committee approval was requested as this was not an experimental study.

### Results

The mean age of the participants was  $55.61 \pm 17.40$ . The duration of the treatment varied between one and 360 months, and the mean was  $85.31 \pm 81.04$  months. Of the participants, 52.5% were male, 67.5% were married, 33.3% were primary

**Table 1. Mean scores and expected values of the Brief Symptom Inventory**

Mental disorders	Mean scores	Expected values	
	Mean±Standard deviation	Minimum	Maximum
Somatization	0.98±0.73	0	4
Obsessive compulsiveness	0.85±0.72	0	4
Interpersonal censitivity	0.69±0.66	0	4
Depression	0.76±0.73	0	4
Anxiety	0.63±0.65	0	4
Hostility	0.85±0.72	0	4
Phobic anxiety	0.4±0.54	0	4
Paranoid ideation	0.72±0.62	0	4
Psychoticism	0.47±0.55	0	4
Additional items	0.58±0.52	0	4
Global Severity Index	0.73±0.5	0	4

**Table 2. Sociodemographic characteristics and the mental disorder scores analysis of the patients**

	Mental disorders											
	S	OBS	IS	D	A	H	PA	PI	P	AI	GSI	
Sex												
Female	1.07±0.82	0.94±0.79	0.81±0.73	0.88±0.78	0.72±0.66	0.94±0.79	0.49±0.56	0.75±0.69	0.4±0.54	0.65±0.56	0.8±0.54	
Male	0.9±0.64	0.77±0.65	0.57±0.58	0.65±0.66	0.56±0.64	0.77±0.65	0.33±0.52	0.69±0.56	0.53±0.56	0.51±0.47	0.67±0.46	
t	1.50	1.76	4.07*	2.97	1.81	1.76	2.64	0.34	1.61	2.07	2.07	
Marital status												
Married	0.94±0.71	0.74±0.64	0.63±0.61	0.68±0.68	0.59±0.65	0.74±0.64	0.38±0.52	0.69±0.6	0.42±0.5	0.55±0.52	0.68±0.48	
Single	0.79±0.63	1.05±0.92	0.65±0.63	0.83±0.82	0.57±0.54	1.05±0.92	0.22±0.34	0.63±0.43	0.5±0.71	0.41±0.33	0.7±0.47	
Separated	1.41±1.13	1.02±0.79	1.14±1.21	1.08±0.99	0.74±0.65	1.02±0.79	0.63±0.8	1.33±0.98	0.5±0.6	0.81±0.68	1.02±0.8	
Widow	1.26±0.66	1.13±0.77	0.83±0.58	0.97±0.7	0.89±0.82	1.13±0.77	0.64±0.69	0.69±0.67	0.59±0.62	0.8±0.54	0.92±0.49	
KW	1.99	1.93	1.58	1.24	0.93	1.93	2.06	2.56	0.75	2.07	1.77	
Family relations												
Enhanced	1.14±0.81	0.89±0.74	0.52±0.48	0.8±0.74	0.65±0.65	0.89±0.74	0.38±0.6	0.82±0.64	0.34±0.34	0.54±0.5	0.76±0.49	
Weakened	1.36±0.85	1.06±0.83	1.15±1	1.16±0.84	0.8±0.68	1.06±0.83	0.71±0.87	0.83±0.83	0.89±0.85	0.8±0.71	1±0.63	
Did not change	0.84±0.65	0.76±0.64	0.68±0.64	0.63±0.63	0.57±0.63	0.76±0.64	0.35±0.44	0.61±0.56	0.45±0.56	0.55±0.5	0.65±0.46	
F	2.52	2.02	2.95*	4*	1.31	2.02	1.69	2.93*	3.48*	1.08	3.07*	
Public insurance												
No	1.29±0.82	1.19±1.06	0.62±0.71	1.45±1.1	1.23±1.02	1.19±1.06	0.57±1.08	0.83±0.65	0.64±0.59	0.52±0.53	1.02±0.77	
Yes	0.96±0.66	0.74±0.59	0.64±0.58	0.64±0.63	0.57±0.63	0.74±0.59	0.37±0.44	0.68±0.64	0.37±0.46	0.53±0.51	0.66±0.45	
t	1.56	1.95	1.76	4.85*	2.95	1.55	1.62	2.05	2.65	1.45	2.97	

\*p<0.05, \*\*p<0.01. S: Somatization; OBS: Obsessive compulsiveness; IS: Interpersonal sensitivity; D: Depression; A: Anxiety; H: Hostility; PA: Phobic anxiety; PI: Paranoid ideation; P: Psychoticism; AI: Additional items; GSI: Global Severity Index.

school graduates, 41.7% were retired and 5.8% did not have public insurance. Of them, 42.5% responded they were at a mid-level income.

Of the participants, 40% lived with their partner and children, 6.7% lived with their caregiver and 51.7% had another chronic disease. Among the participants, 20% received medication and dietary treatments due to CRF (not requiring dialysis, however, monitored with medication and dietary treatments, stage 1–4 CRF) while 65.8% and 14.2% of them received hemodialysis and peritoneal dialysis treatments, respectively.

The researchers examined the emotions, thoughts and ideas of patients in the study group regarding their disease. Accordingly, controlling fluid intake (33.03%), complying with diet (32.16%), medication use (20.53%) and loneliness (14.28%) were the things patients had difficulties with regarding the disease. On the other hand, factors such as coping (48.27%), public insurance (37.06%), support systems (11.20%) and knowledge (3.44%) positively affected the duration of the disease. The study found that 60.83% of the participants received information about the disease and 72.5% accepted their disease.

Table 1 shows the mean scores of patients taken from the BSI and its subscales. The study showed the BSI scores were close to the medium level.

Table 2 shows the sociodemographic characteristics and the analysis of the mental disorder scores of the patients. There were no differences between the intergroup mental disorder scores in terms of the treatment type based on CRF, age groups, working status, income levels and having another chronic disease. There was a statistically significant difference in at least one of the mental disorders of women who had weak family relations after the disease and no public insurance.

Table 3 shows the analysis of perceived problems based on the disease and mental disorder scores. The mental disorder mean scores of participants who were affected by problems such as body image and self-respect, isolation from social environment, being dependent on the hospital and sexual problems based on the

**Table 3. Patients' perceived problems based on the disease and mental disorder analyses**

Perceived problems based on the disease		Mental disorders										
	S	OBS	IS	D	A	H	PA	PI	P	AI	GSI	
<b>Physical problems</b>												
Exist (n=80)	1.06±0.78	0.82±0.68	0.69±0.68	0.76±0.69	0.62±0.64	0.82±0.68	0.46±0.59	0.72±0.65	0.43±0.5	0.6±0.53	0.74±0.51	
Do not exist (n=40)	0.83±0.59	0.91±0.8	0.68±0.64	0.76±0.8	0.66±0.68	0.91±0.8	0.29±0.41	0.72±0.57	0.55±0.64	0.53±0.49	0.71±0.5	
t	1.68	-0.67	0.03	0	-0.28	-0.67	1.7	0.03	-1.11	0.75	0.36	
<b>Diet and fluid limitation</b>												
Exist (n=55)	1.11±0.83	0.96±0.69	0.74±0.77	0.74±0.7	0.65±0.59	0.96±0.69	0.42±0.54	0.84±0.63	0.51±0.6	0.65±0.57	0.8±0.5	
Do not exist (n=65)	0.87±0.61	0.76±0.74	0.64±0.55	0.78±0.75	0.61±0.71	0.76±0.74	0.39±0.55	0.62±0.6	0.44±0.51	0.51±0.47	0.67±0.5	
t	1.85	1.56	0.81	-0.25	0.35	1.56	0.34	1.85	0.69	1.44	1.49	
<b>Body image self-esteem</b>												
Exist (n=33)	1.06±0.84	1.1±0.75	0.71±0.84	0.95±0.68	0.72±0.75	1.1±0.75	0.44±0.66	0.79±0.68	0.58±0.7	0.75±0.55	0.85±0.58	
Do not exist (n=87)	0.95±0.69	0.76±0.69	0.68±0.59	0.69±0.73	0.6±0.62	0.76±0.69	0.39±0.5	0.69±0.6	0.43±0.49	0.51±0.49	0.68±0.47	
t	0.72	2.35*	0.21	1.76	0.86	2.35*	0.48	0.8	1.28	2.36*	1.71	
<b>Isolation from social environment</b>												
Exist (n=25)	1.25±0.97	1.33±0.82	0.83±0.97	1.09±0.87	0.82±0.83	1.33±0.82	0.52±0.76	0.88±0.72	0.69±0.7	0.87±0.58	1.01±0.68	
Do not exist (n=95)	0.91±0.64	0.72±0.64	0.65±0.56	0.68±0.66	0.58±0.59	0.72±0.64	0.37±0.47	0.68±0.59	0.41±0.5	0.5±0.48	0.66±0.42	
t	2.11*	3.94**	1.19	2.58*	1.67	3.94**	1.21	1.46	2.26*	3.29**	3.21**	
<b>Dependence on the hospital</b>												
Exist (n=53)	1.06±0.88	1.06±0.74	0.69±0.75	0.84±0.78	0.71±0.69	1.06±0.74	0.42±0.63	0.75±0.59	0.59±0.68	0.61±0.52	0.82±0.54	
Do not exist (n=67)	0.92±0.58	0.68±0.66	0.69±0.59	0.7±0.68	0.57±0.62	0.68±0.66	0.39±0.47	0.7±0.65	0.37±0.41	0.55±0.52	0.66±0.47	
t	1	2.93**	-0.01	1.04	1.16	2.93**	0.28	0.45	2.2*	0.66	1.7	
<b>Sexual problems</b>												
Exist (n=18)	1.02±0.86	1.19±0.88	0.85±0.61	1.01±0.83	0.91±0.82	1.19±0.88	0.5±0.69	0.81±0.62	0.57±0.59	0.69±0.46	0.9±0.53	
Do not exist (n=102)	0.98±0.71	0.79±0.67	0.66±0.67	0.72±0.7	0.58±0.61	0.79±0.67	0.39±0.52	0.7±0.62	0.45±0.55	0.55±0.53	0.7±0.49	
t	0.21	2.24*	1.15	1.58	1.99*	2.24*	0.82	0.64	0.82	1.06	1.59	

\*p<0.05, \*\*p<0.01. S: Somatization; OBS: Obsessive compulsiveness; IS: Interpersonal sensitivity; D: Depression; A: Anxiety; H: Hostility; PA: Phobic anxiety; PI: Paranoid ideation; P: Psychoticism; AI: Additional items; GSI: Global Severity Index.

Table 4. Patients' emotions, thoughts and ideas regarding the disease and mental disorder analyses

		Mental disorders										
Patients difficulties with these issues during the disease process		S	OBS	IS	D	A	H	PA	PI	P	AI	GSI
Compliance with diet (n=36)		0.93±0.58	0.84±0.63	0.56±0.46	0.73±0.74	0.59±0.49	0.84±0.63	0.3±0.34	0.71±0.58	0.45±0.52	0.52±0.47	0.69±0.41
Compliance with fluid limitation (n=37)		1.1±0.87	0.91±0.78	0.88±0.85	0.87±0.79	0.73±0.73	0.91±0.78	0.5±0.63	0.82±0.73	0.51±0.55	0.69±0.55	0.85±0.6
Drug use (n=23)		0.75±0.56	0.73±0.7	0.45±0.41	0.5±0.49	0.42±0.56	0.73±0.7	0.21±0.38	0.6±0.54	0.26±0.26	0.42±0.37	0.52±0.36
Loneliness (n=16)		0.96±0.7	1.07±0.88	1.02±0.75	1.15±0.71	0.84±0.82	1.07±0.88	0.65±0.74	0.77±0.66	0.78±0.83	0.71±0.64	0.89±0.56
F		1.21	0.74	3.98*	2.87*	1.74	0.74	3.11*	0.58	2.95*	1.84	2.7*
Factors that positively affect the duration of the disease												
Coping (n=56)		0.85±0.68	0.84±0.79	0.64±0.7	0.68±0.68	0.55±0.6	0.84±0.79	0.4±0.5	0.71±0.67	0.42±0.55	0.46±0.47	0.67±0.51
Support systems (n=13)		1.18±0.92	1.06±0.84	0.85±0.94	0.89±0.71	0.72±0.74	1.06±0.84	0.31±0.44	0.63±0.56	0.63±0.85	0.76±0.68	0.83±0.6
Knowledge (n=4)		0.71±0.2	1.04±0.6	0.58±0.32	0.89±1.07	0.45±0.3	1.04±0.6	0.35±0.34	0.75±0.42	0.69±0.52	1.04±0.42	0.83±0.4
Public insurance (n=43)		1.04±0.68	0.75±0.55	0.68±0.53	0.79±0.72	0.69±0.68	0.75±0.55	0.39±0.61	0.77±0.61	0.46±0.45	0.61±0.48	0.74±0.46
F		1.2	0.75	0.36	0.48	0.57	0.75	0.11	0.18	0.72	2.68	0.47
Obtains information about the disease												
Yes (n=73)		0.96±0.8	0.76±0.69	0.64±0.64	0.62±0.66	0.57±0.61	0.76±0.69	0.36±0.55	0.65±0.58	0.4±0.49	0.56±0.53	0.67±0.48
No (n=14)		1.12±0.73	1.12±0.68	0.95±0.89	1.97±0.64	0.84±1.03	1.12±0.68	0.67±0.8	1±0.7	0.79±0.79	0.71±0.6	0.95±0.65
Partially (n=33)		0.97±0.57	0.92±0.79	0.68±0.6	0.97±0.83	0.68±0.55	0.92±0.79	0.38±0.36	0.76±0.66	0.48±0.55	0.57±0.46	0.77±0.47
F		0.29	1.68	1.32	3.43*	1.14	1.68	1.97	2.05	2.88	0.59	2.07
Accepts the disease												
Yes (n=87)		0.97±0.71	0.84±0.72	0.64±0.56	0.69±0.68	0.59±0.65	0.84±0.72	0.38±0.52	0.71±0.59	0.41±0.48	0.54±0.47	0.7±0.48
No (n=10)		0.71±0.66	0.87±0.91	0.87±1.03	0.96±0.89	0.52±0.77	0.87±0.91	0.36±0.5	0.75±0.78	0.93±0.95	0.43±0.63	0.73±0.66
Partially (n=23)		1.16±0.8	0.87±0.66	0.77±0.82	0.93±0.8	0.83±0.62	0.87±0.66	0.52±0.65	0.75±0.69	0.49±0.52	0.76±0.61	0.83±0.52
F		1.4	0.02	0.72	1.33	1.32	0.02	0.67	0.05	4.01*	2.07	0.62

\*p<0.05, \*\*p<0.01. S: Somatization; OBS: Obsessive compulsiveness; IS: Interpersonal sensitivity; D: Depression; A: Anxiety; H: Hostility; PA: Phobic anxiety; PI: Paranoid ideation; P: Psychoticism; AI: Additional items; GSI: Global Severity Index.

disease were higher. The study found there were statistically significant differences in at least one of the mental symptoms of those who said they were not able to accept the disease, had the most difficulty with loneliness and did not get information about the disease (Table 4).

The mental symptom score of the participants who were at a psychopathologic level according to the GSI (Table 2 and Table 3), were those separated from their partner, had weak relationships within the family following the disease diagnosis, did not have public insurance and thought that they were isolated from their social environment.

## Discussion

The study found there were no differences in the mental status of patients who received HD, PD and medication and dietary treatments. The study also found that in addition to some sociodemographic characteristics of the patients; perceived problems and emotions, thoughts and ideas related to the disease, and their status of receiving information about the disease affected mental status.

The majority of the participants in the study group were male and the primary treatment for patients with ESDR stage was HD. This result shows similarity with the data obtained annually in Turkey.<sup>[4]</sup>

High mean scores obtained from the BSI indicated that the psychiatric symptoms of the individual were increasing, however, the mean BSI scores of the patients in this study were low to medium level. This could be a result of the sociocultural characteristics of the patient presenting to the hospital which at the time of the study served as a military hospital.

There was no difference between the mean BSI scores of patients who received HD, PD and medication and dietary treatments. These treatments are based on CRF. There are studies that compared the psychosocial statuses of patients receiving HD and PD treatments and found differences between the groups;<sup>[19,20]</sup> however, there were also studies that did not find any difference.<sup>[21–23]</sup> Study results about this subject are controversial, and the measurement tools and assessment methods that were used differ. Additionally, no study that compared the patient group who receive medication and dietary treatment and the dialysis group exists. The results of the present study suggest that psychosocial assessments should be initiated on patients diagnosed with CRF.

The present study determined that the mental disorder scores of the patients who said they had problems such as deterioration in family relations, separation from their partner, isolation from their social environment, being dependent on the hospital, and loneliness and encountering sexual problems were higher in many subscales; there was a statistically significant difference. The qualitative study by Zengin and Yıldırım<sup>[24]</sup> conducted with HD patients found that male participants generally had difficulties with being unable to continue working, having sexual problems, losing the dominant role in the

house, and being dependent on the HD machine and family members. Female participants generally had difficulties with performing housework, not being a suitable wife for her husband, the fear of being left by the husband, being forced into having sex and losing their physical beauty. The study by Bahar et al.<sup>[25]</sup> found that changes in family roles and social life affected depression levels significantly and there was a positive correlation between the scores of male participants in terms of sexual problems and depression. The analysis conducted by Untas et al.<sup>[26]</sup> of the data of 32,332 HD patients from 12 countries between 1996–2008 determined that the treatment compliance and the quality of life were low and the mortality rate was higher in patients who did not participate in social activities due to the disease, felt lonely, were not satisfied with the support of their families and felt like a burden. A study conducted with HD patients in Turkey found a negative relationship between social support provided by the family and depression.<sup>[27]</sup> Another study also found a significant relationship between loneliness and depression.<sup>[28]</sup>

Plantinga et al.<sup>[29]</sup> found that social support improved the quality of life of patients who proceeded with both HD and PD treatments and decreased the length of the hospital stay. The study by Lin et al.<sup>[30]</sup> which was conducted with the PD patients reported that low social support was independently associated with depression. The study by Karaca et al.<sup>[31]</sup> which was conducted with PD patients found that among the patients, 46.6% stated that nothing in their lives was the same, their lives became more complex and difficult; 49% stated that their working lives were negatively affected and 44.4% stated that it was quite difficult for them to maintain their social lives. The results of the present study which show similarity to those in the literature revealed how important social support and family relations were for patients with chronic diseases.

The mental disorder scores were significantly higher in patients who had difficulties with their body image and self-respect, did not have any information regarding their disease, did not accept the disease and did not have public insurance. Öyekçin et al.<sup>[32]</sup> found that in HD and PD patients, body image perceptions deteriorated as their anxiety and depression levels increased and suggested that patients should be informed about the effects of dialysis. The study by Kocaman Yıldırım et al.<sup>[33]</sup> conducted with HD patients from different health centers revealed that patients who had insufficient knowledge about the disease had higher anxiety, and the risk of depression and anxiety decreased for those who had more knowledge about the disease. Similarly, the present study determined that the scores of the depression symptom of patients who lacked knowledge about their disease were higher. Individuals lacking knowledge about their disease may have difficulties in accepting the situation. Providing sufficient, understandable, continuous and updated information about the disease and the treatment is thought to prevent psychological problems as it eases the acceptance process and decreases fear and worries.

CRF is a chronic disease requiring difficult treatment and management and can be exhausting and expensive. Absence of public insurance at the same time can be added to the other encounters with the disease including the fear of death. Public insurance is of primary importance especially for patients with chronic diseases. The annual costs of HD and PD treatments per patient were reported at 21.595 and 25.664 Euros, respectively.<sup>[34]</sup> In addition, annual transportation costs also varied between 3.323 and 6.338 Euros.<sup>[34]</sup> Mercado-Martínez and Correa-Mauricio<sup>[35]</sup> stated that HD treatment is an unbearable economic burden on renal patients and their families without public insurance and emphasized the necessity of renal treatments becoming available worldwide immediately.

Based on these problems the possibility of patients with CRF developing psychological disorders is high. Diagnosing high-risk groups in terms of psychological disorders in the nursing process is vital. Consequently, potential problems can be prevented by performing mental assessments and informing patients and their families about the disease and the treatment process. Furthermore, determining emotions, thoughts and ideas of patients and their families about the disease at the onset of the disease is essential. Also, consultation liaison psychiatric nurses play a vital role in patients' and their families' compliance with the lifestyle changes related to CRF and the treatment.

Performing psychosocial assessments on patients with CRF may detect possible problems early and ensure that necessary precautions are taken according to the results of the present study. This study further suggests that patients with CRF be assessed by consultation liaison psychiatric nurses.

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