The Effect of Depression and Perceived Social Support Systems on Quality of Life in Dialysis Patients

Diyaliz Hastalarında Depresyon ve Algılanan Sosyal Destek Sistemlerinin Yaşam Kalitesi Üzerine Etkileri

ABSTRACT

OBJECTIVE: The aim of this study was to find the effect of depression and perceived social support systems on quality of life in hemodialysis and peritoneal dialysis patients.

MATERIAL and METHODS: This study was a cross-sectional study that was conducted between June and September 2016 on 122 hemodialysis and peritoneal dialysis patients at the Erciyes University Health Application and Research Center and a private dialysis center. The patient information form, the Beck Depression Inventory (BDI), Multidimensional Scale of Perceived Social Support (MSPSS) and WHOQOL-BREF were used as data collection tools.

RESULTS: Patients got the highest scores in the environmental field in WHOQOL-BREF, and the family support sub-dimension was the highest in MSPSS. Patients who were illiterate and literate had statistically significantly lower mean scores in the mental field and environmental field when compared with the other education levels. There was a negative correlation between the age and physical and mental fields, peritoneal dialysis duration and social field, peritoneal dialysis treatment time per day and mental field. MSPSS total score and mental, social, and environmental fields had a statistically significant positive correlation (p<0.05). BDI and WHOQOL-BREF life quality sub-scale scores had a statistically significant negative correlation.

CONCLUSION: Depression has a negative effect on the quality of life of dialysis patients, whereas social support systems have positive effect.

KEY WORDS: Dialysis, Depression, Social support, Quality of life

ÖZ

AMAÇ: Çalışmada hemodiyaliz ve periton diyalizi hastalarında depresyon ve algılanan sosyal destek sistemlerinin yaşam kalitesi üzerine etkisinin araştırılması amaçlanmıştır.

GEREÇ ve YÖNTEMLER: Araştırma, Temmuz-Eylül 2016 tarihleri arasında Erciyes Üniversitesi Sağlık Uygulama ve Araştırma Merkezi'ne ve özel diyaliz merkezine hemodiyaliz ve periton diyalizi için başvuran 122 hasta üzerinde yürütülen kesitsel tipte bir çalışmadır. Veri toplama aracı olarak; Hasta bilgi formu ile Beck Depresyon Ölçeği (BDÖ), Çok Boyutlu Algılanan Sosyal Destek Ölçeği (MSPSS) ve WHOQOL-BREF ölçeği kullanılmıştır

BULGULAR: Hastalar, WHOQOL-BREF ölçeğinden en yüksek puanı çevresel alandan, MSPSS en yüksek puanı aileden destek alt boyutundan almışlardır. Okuryazar değil ve okuryazar olan hastaların ruhsal alan ve çevresel alan puan ortalamaları diğer eğitim düzeyleri ile kıyaslandığında anlamlı düzeyde düşük bulunmuştur. Yaş ile bedensel ve ruhsal alan arasında, periton diyalizi süresi ile sosyal alan arasında, periton diyalizi tedavisi günlük süresi ile ruhsal alan arasında negatif yönde anlamlı ilişki tespit edilmiştir. MSPSS toplam puanı ile ruhsal, sosyal, çevresel alan arasında pozitif yönde anlamlı ilişki tespit edilmiştir (p<0.05). BDÖ ile WHOQOL-BREF yaşam kalitesi alt ölçek puanları arasında negatif yönde anlamlı ilişki tespit edilmiştir.

SONUÇ: Diyaliz hastalarının yaşam kalitesini depresyon olumsuz yönde etkilerken, sosyal destek sistemleri olumlu yönde etkilemektedir.

ANAHTAR SÖZCÜKLER: Diyaliz, Depresyon, Sosyal destek, Yaşam kalitesi

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INTRODUCTION

Kidney failure is increasing worldwide (1,2). It has been stated that end-stage renal imposes physical and psychosocial stressors on patients with kidney disease (3). Knowledge of the relationships between quality of life, depression and social support in individuals with chronic kidney disease (CKD) is important for medical professionals.

There may be a correlation between social support systems in a society and depression and quality of life with chronic diseases and CKD. The patients' long-term treatment may cause depression with the loss of social support resulting in the decrease in the quality of life. When this relationship is clearly shown, it may be possible to overcome problems by establishing government-supported or other institutions.

The aim of this study was to find the effect of depression and perceived social support systems on quality of life in hemodialysis and peritoneal dialysis patients by using the Beck Depression Inventory (BDI)**,** Multidimensional Scale of Perceived Social Support (MSPSS) and WHOQOL-BREF as data collection tools.

MATERIALS and METHODS

Patients

This cross-sectional study was conducted between July-September 2016. The patients included in this study were hemodialysis and peritoneal dialysis patients who presented to the Erciyes University Health Application and Research Centre, and to a private dialysis centre. The patients aged 18 and older who could cooperate and who agreed to give written consent were included in the study. The patients had no diagnosed psychiatric diseases. There were 122 (62 hemodialysis and 60 peritoneal dialysis) patients. The data collection tools were applied face to face by the researchers after dialysis.

This study was approved by the Ethics Committee of the Erciyes University Faculty of Medicine and written informed consent was obtained from the participants.

Data Collection Tools

A patient information form and the Beck Depression Inventory (BDI)**,** the Multidimensional Scale of Perceived Social Support (MSPSS) and the World Health Organization Quality of Life Scale (WHOQOL-BREF) were used as data collection tools.

1. Patient Information Form

The patient information form included the patients' age, gender, marital status, education level, occupation, income, and house type. In addition, other chronic diseases, duration of renal disease, and the duration and frequency of hemodialysis or peritoneal dialysis were asked.

2. Beck Depression Inventory (BDI)

BDI is an inventory with four self-evaluation items and includes 21 Likert-type symptom categories. It is evaluated with 0-3 points. BDI measures the physical, mental and cognitive symptoms observed in depression and a study on the validity of its Turkish form has been conducted by Hisli (4). The patients are asked to state the expression that best defines their current situation and the result is calculated as the sum of the items. The maximum score of the inventory is 63. An increase in total points shows the severity of depression. Cronbach's alpha internal consistency coefficient was found to be 0.873 in our study.

3. Multidimensional Scale of Perceived Social Support (MSPSS)

MSPSS has been validated for Turkish by Eker and Arkar (5). It has 12 items, three dimensions and a total score. It includes the subjective evaluation of perceived social support sufficiency from three different sources; family, friends and significant other. High scores show that the perceived social support is high. The total and sub-area Cronbach's alpha values in MSPSS were found to be Total=0.917, Family=0.892, Friends=0.934, Significant other=0.873 in our study.

4. WHOQOL-BREF (TR)

WHOQOL-BREF (TR) is the short form World Health Organization Quality of Life Questionnaire for Turkish people. Its Turkish validity study has been conducted by Eser et al. (6). The patients are asked to answer the questions considering the last fifteen days. There are 27 questions in total. The questions have 5 Likert-type choices. Physical, social, psychological, environmental and international environmental field points are calculated by using the questions after the first and second general questions. The quality of life increases as the points increase.

Statistical Analysis

Student's t-test was used to compare two independent groups, and analysis of variance was used to compare more than two groups. Dunn's test (post hoc) was used to find the group causing the difference. Spearman correlation coefficient was calculated to evaluate the correlation between the variables. A p value <0.05 was accepted as statistically significant.

RESULTS

There were 62 (50.8%) hemodialysis and 60 (49.2%) peritoneal dialysis patients in the study group. CKD mean duration was 8.1±5.7 years and the median (min-max) 7 (1-25) years. Chronic diseases other than CKD were present in 101 (82.8%) of the patients; 28.7'% hypertension, 27.9% diabetes mellitus and hypertension, and 9.8% diabetes mellitus, hypertension and heart failure. The mean duration from the start was 7.0±5.9, median (min-max) 6.0 (2 months-24 years) for hemodialysis, and 3.7±3.0 and 3 (3 months-15 years),

respectively, for peritoneal dialysis. Hemodialysis patients were being treated 2.8±0.4 days per week, and peritoneal dialysis patients were being treated 4.0±1.0 hours per day.

The patients were divided as 61.5% male, 57.4% primary school graduates, 79.5% married, 40.2% retired, 50.0% earning minimum wage, and 56.6% living in flats. Current smokers made up 21.3% while 42.6% had never smoked (Table I). Environmental field mean scores were statistically significantly higher in men than in women (p<0.05) (Table I). Patients who were illiterate and barely literate had statistically significantly lower mean scores in the mental field when compared with the other education levels, and environmental field mean scores were statistically significantly lower when compared with the university graduates (p<0.05) (Table I).

The environmental field mean scores of the retired patients were statistically significantly higher when compared with the housewives' scores (p<0.05) (Table I). The environmental field mean scores of the patients with minimum wage were also statistically significantly higher when compared with the patients at other income levels (p<0.05) (Table I). In addition, the environmental field mean scores of the patients living in flats were statistically significantly higher than patients living in separate houses (p<0.05) (Table I).

The patients' WHOQOL-BREF, MSPSS and BDI mean scores, median (min.-max. scores) are presented in Table II. The patients got the highest scores in the environmental field in WHOQOL-BREF, and the family support sub-dimension was the highest in MSPSS. BDI mean total score was 14.4±9.0 (Table II).

There was a weak negative relationship between age and the physical and mental fields, a weak negative relationship between peritoneal dialysis duration and social field, and a low negative relationship between peritoneal dialysis treatment time per day and the mental field (p<0.05) (Table III). There was a weak positive relationship between perceived social support from family and the social field. In addition, there was a low positive relationship with the perceived social support from friends and the mental field, and a moderate positive relationship between perceived social support from friends and the social field (p<0.001) (Table III).

Perceived social support from a significant other had a weak positive relationship with the mental field, a low positive relationship with the social field, and a weak positive relationship with the environmental field (p<0.05) (Table III). In addition, the total score of perceived social support system has a low positive relationship with the mental field, a moderate positive relationship with the social field, and a weak positive relationship with the environmental field (p<0.05) (Table III). BDI and WHOQOL-BREF life quality sub-scale scores had a statistically significant negative relationship (weak, low, moderate) (p<0.05) (Table III).

DISCUSSION

Statement of Principal Findings

This study demonstrated that [1] Patients got the highest scores in the environmental field in WHOQOL-BREF, and the family support sub-dimension was the highest in the MSPSS. [2] Environmental field mean scores were statistically significantly higher in men than in women. [3] Patients who were illiterate and barely literate had statistically significantly lower mean scores in the mental field and environmental field. [4] There was a negative correlation between age and physical and mental fields, peritoneal dialysis duration and social field, and peritoneal dialysis treatment time per day and mental field. [5] MSPSS total score and mental, social, and environmental fields had statistically significant positive correlation. [6] BDI and WHOQOL-BREF life quality sub-scale scores had a statistically significant negative correlation.

Strengths and Limitations

CKD patients need care that requires the involvement of many people including support from friends and significant others. There have been many studies showing the factors affecting the quality of life in hemodialysis and peritoneal dialysis patients. However, there is still a need for studies on the social support of dialysis patients. These studies may reveal the support requirements of dialysis patients and measures may be taken to increase this quality of life by increasing the support systems of these patients. The strength of this study is that it clearly demonstrates the social support system the patients receive, and its relation with the quality of life and current depression. This is the first study where WHOQOL-BREF, MSPSS and BDI were used together.

The limitation of this study is that the BDI by itself may not be sufficient in defining depression in patients without family physicians or a psychiatrists taking a detailed history and performing a physical examination.

Comparison with Existing Literature

In 2005, Yang SC et al. performed a study in hemodialysis patients by using WHOQOL-BREF. Their results showed that in WHOQOL-BREF, the 4 domains (physical, psychological, social relations, and environment) each differentiated symptoms/problems of hemodialysis patients from age-, sex-, and education-matched healthy reference patients. In conclusion, the WHOQOL-BREF was considered to be reliable and valid for long-term study of hemodialysis patients, and hemodialysis had negative impacts on quality of life especially in patients with more severe disease with greater symptom/problem scores (7). In de Souza FF et al.'s study, the WHOQOL-BREF showed a negative correlation with the severity of the end-stage renal disease severity index (8). Berlim MT et al. used the WHOQOL BREF and the BDI to compare the quality of life and depressive

Table I: Distribution of WHOQOL-BREF quality of life points according to patients' demographic-socio cultural properties.

Variables	n (%)	WHOQOL-BREF Quality of Life Scale			
		Physical field X±SD	Mental field X±SD	Social field X±SD	**Env. field X±SD
Gender					
Women	47 (38.5)	12.5±2.5	12.6±2.2	11.5±2.8	13.2±1.5
Men	75 (61.5)	12.6±2.8	13.4±2.7	11.6±3.4	14.0±1.5
p		0.702	0.082	0.949	**0.011**
Educational Level					
Illiterate/literate	21 (17.5)	11.7±2.9	11.6±2.3 [a]	11.3±2.1	12.8±1.6[a]
Primary school	70 (57.4)	12.8±2.6	13.2±2.6 [b]	11.8±3.3	13.6±1.3[ab]
High school	18 (14.8)	12.8±2.8	13.5±2.6 [b]	11.0±3.8	14.0±1.7[ab]
University	13 (10.7)	12.6±2.5	13.7±1.9 [b]	11.4±3.2	15.1±1.6[b]
p		0.465	**0.042**	0.760	**<0.001**
Marital status					
Married	97 (79.5)	12.4±2.8	13.0±2.5	11.6±3.1	13.6±1.5
Single	25 (20.5)	13.2±2.4	13.5±2.7	11.2±3.4	13.8±1.7
p		0.208	0.355	0.612	0.698
Profession					
Retired	49 (40.2)	12.7±3.1	13.0±3.0	11.2±3.5	14.0±1.5[a]
Housewife	38 (31.1)	12.2±2.6	12.4±2.2	11.4±2.8	13.1±1.5[b]
Self employed	11 (9.0)	12.6±2.6	14.4±2.8	13.2±2.8	13.4±1.4[ab]
Other*	24 (19.7)	12.8±2.1	13.6±1.8	11.7±3.2	14.0±1.7[ab]
p		0.802	0.073	0.302	**0.019**
Income					
Minimum wage	61 (50.0)	12.4±2.6	12.9±2.2	11.5±3.0	13.1±1.5[a]
1300-2000 TL	51 (41.8)	12.7±2.8	13.1±3.1	11.4±3.4	14.0±1.3[b]
2001-3000 TL	10 (8.2)	12.8±2.7	13.9±1.7	12.1±3.0	15.3±1.3[c]
p		0.828	0.562	0.823	**<0.001**
House type					
Flat	69 (56.6)	12.7±2.7	13.4±2.5	11.9±3.2	14.1±1.4
Separate	53 (43.4)	12.4±2.7	12.6±2.6	11.0±3.1	13.2±1.5
p		0.594	0.092	0.111	**0.001**
Smoking					
Still	26 (21.3)	12.4±2.8	12.8±2.8	10.9±3.2	14.0±1.6
Never	52 (42.6)	12.6±2.6	12.9±2.4	11.7±2.9	13.3±1.5
Gave up	44 (36.1)	12.6±2.8	13.3±2.7	11.7±3.4	13.9±1.5
p		0.954	0.658	0.533	0.077
Chronic disease					
Yes	101 (82.8)	12.4±2.8	12.9±2.6	11.6±2.9	13.7±1.6
No	21 (17.2)	13.2±2.0	13.7±2.6	11.5±4.2	13.7±1.2
p		0.212	0.207	0.986	0.951
Dialysis type					
Hemodialysis	62 (50.8)	12.2±3.1	13.1±2.9	11.5±3.7	13.6±1.7
Peritoneal dialysis	60 (49.2)	12.9±2.2	13.0±2.2	11.6±2.6	13.7±1.4
p		0.155	0.892	0.840	0.627

*Employee, officer, unemployed, **Env: Environmental, alphabetical superscripts stand for statistical significance if groups are different
(a and b are different, ab is not)

symptoms of outpatients with major depression with that of non-depressed individuals undergoing hemodialysis. Their results were that depressed patients' quality of life scores were significantly lower in all the assessed domains (i.e., physical health, psychological, social relationships, environmental) (9).

Ginieri-Coccossis M et al. examined differences regarding quality of life, mental health and illness beliefs between in-centre haemodialysis and peritoneal dialysis patients. Patient-reported assessments included WHOQOL-BREF and two other scales. The results showed that hemodialysis patients indicated

Table II: The patients' WHOQOL-BREF, SPSSS and BDI scores.

Scales	X±SD	Median (min-max)
WOQOL-BREF scale		
Physical field	12.6±2.7	12.6 (6.3-17.7)
Mental field	13.1±2.6	13.3 (7.3-20)
Social Field	11.5±3.2	12.0 (4-20)
Environmental Field	13.7±1.6	13.5 (10-18)
Scale of Perceived Social Support Systems (SPSSS)		
Perceived social support from family	24.5±5.2	27 (4-28)
Perceived social support from friends	18.9±7.3	20 (4-28)
Perceived social support from a significant other	17.7±6.6	18 (4-28)
Total SPSS	61.4±15.8	63 (12-84)
BDI total	14.4±9.0	14 (0-38)

SPSS: Scale of Perceived Social Support, **BDI:** Beck Depression Inventory

Table III: The relationship between MSPSSS, BDI and WHOQOL-BREF field scores.

Variables	WHOQOL-BREF			
	Physical field	**Mental field**	**Social field**	**Environmental field**
Age	rho=-0.229 **p=0.011**	rho=-0.247 **p=0.006**	rho=-0.132 p=0.147	rho=-0.155 p=0.088
CKD duration	rho=-0.013 p=0.887	rho=0.025 p=0.785	rho=-0.041 p=0.653	rho=0.046 p=0.612
Peritoneal dialysis /years	rho=0.079 p=0.548	rho=-0.122 p=0.353	rho=-0.267 **p=0.039**	rho=-0.006 p=0.962
Peritoneal dialysis treatment time/day	rho=-0.207 p=0.113	rho=-0.327 **p=0.011**	rho=0.009 p=0.946	rho=-0.064 p=0.625
Hemodialysis/year	rho=0.055 p=0.673	rho=0.021 p=0.873	rho=-0.050 p=0.702	rho=-0.008 p=0.951
Hemodialysis treatment/week	rho=-0.201 p=0.117	rho=-0.167 p=0.195	rho=-0.214 p=0.095	rho=0.004 p=0.976
Perceived social support from family	rho=-0.049 p=0.593	rho=0.169 p=0.063	rho=0.234 **p=0.010**	rho=0.068 p=0.456
Perceived social support from friends	rho=0.173 p=0.057	rho=0.379 **p<0.000**	rho=0.521 **p<0.001**	rho=0.169 p=0.063
Perceived social support from a significant other	rho=0.018 p=0.845	rho=0.248 **p=0.006**	rho=0.397 **p<0.001**	rho=0.201 **p=0.026**
Total SPSS	rho=0.106 p=0.247	rho=0.357 **p<0.001**	rho=0.516 **p<0.001**	rho=0.191 **p=0.035**
BDI	rho=-0.451 **p<0.001**	rho=-0.637 **p<0.001**	rho=-0.512 **p<0.001**	rho=-0.190 **p=0.036**

rho: Spearman Correlation Coefficient, **SPSS:** Scale of Perceived Social Support, **BDI:** Beck Depression Inventory

significantly lower mean scores in the quality of life domain of environment. Patients in hemodialysis treatment modality were experiencing a more compromised quality of life in comparison to peritoneal dialysis patients (10). The WHOQOL BREF results in our study showed that environmental field mean scores were statistically significantly higher in men and in the retired subjects (compared with housewives), and that illiterate and only literate persons had lower mental field and environmental field scores (compared with the university graduates). In addition, the environmental field mean scores of the patients with minimum wage and the patients living in flats were higher.

Implications

In the WHOQOL BREF results, the presence of age on physical and mental fields may be considered as the consequences of aging. This study showed the negative relationship between peritoneal dialysis duration and social field, and peritoneal dialysis treatment time per day and mental field. In MSPSS, there was positive relationship between perceived social support from the family and from friends and fields of WHOQOL BREF. This study showed that BDI and WHOQOL-BREF life quality sub-scale scores have a negative relationship as well.

The relationship between social support systems in our study group and the depression inventory and quality of life questionnaire shows us the necessity of keeping the patients' social support from family and friends at a desired level to ensure patients have a good quality of life without depression.

CONCLUSIONS

Depression has a negative effect on the quality of life of dialysis patients, whereas social support systems have a positive effect. Government-supported institutions or other institutions may be effective in increasing the patients' support systems.

ACKNOWLEDGEMENT

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