



ORIGINAL ARTICLE

Adaptation of Dialysis Patients to Activities of Daily Life and Evaluation of Quality of Life

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Abstract

Background: This study was conducted in order to determine the life quality and depression levels of patients receiving hemodialysis treatment and their compliance to daily life activities.

Materials and methods: This cross-sectional study consisted of 145 patients with hemodialysis treatment who applied to the Medicine Polyclinic of a hospital in Turkey.

Results: Physically insufficient patients. It turned out that those with visual, hearing and taste problems cannot perform independently of daily activities. In the meantime, by using an auxiliary device (walking stick, hearing aid glasses, prosthesis), while performing his/her daily activities independently.

Conclusion: This study was concluded these patients had insufficiency in their daily life activities, tried to complete their physical insufficient by using assistive tools, and they had high levels of and low levels of life quality.

Keywords

Hemodialysis, Activities of daily life, Quality of life

key in 2001, increased 2.5 times greater approximately within a period of 10 years and reached to 816 in 2012 [2].

Normal life order considerably deteriorates in dialysis patients. Physical inability in dialysis patients causes psycho-social problems such as dependence on the treatment team and machines, change of roles in family, restricted working life and social relations, change in the body image, ambiguity about future, despair, depression, and change in Daily Life Activities (DLA) [3,4]. Causing changes in DLA, the dialysis is a new life experience for patients. It may cause the future dreams and plans of individuals to lose its importance or hinder [5,6].

Somatic symptoms caused by chronic diseases decrease the life quality of individuals and set ground for increasing the risk of depression [7]. Hemodialysis patients who face physical and psychological stressors frequently develop psychological problems like depression [7-9].

Thus, it is important to determine the relationship between the states of CRF patients to fulfill their daily life activities and life quality as well as the depression states of patients. This study was delivered in order to detected the life quality, depression levels of patients receiving hemodialysis treatment and their compliance to daily life activities.

Methods

Setting

This study was a descriptive survey conducted of patients with hemodialysis patients who applied to

Introduction

Chronic Renal Failure (CRF) is defined as the chronic and progressive impairment in renal functions for that reason the reduce in the glomerular filtration value. End-Stage Renal Failure (ESRF) has high rates of morbidity and mortality in the world in Turkey. CRF affects adversely the life quality and health of patients [1]. By the records of the Turkish Society of Nephrology (TSN), 2012 year-end data show that there were approximately 62,000 patients who underwent dialysis or had a kidney transplant in Turkey [1]. The number of patients with ESRF, which was 314 per million population in Tur-



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the Internal Medicine Polyclinic of a hospital in Turkey. The sample group was composed of 145 patients who accepted to attend in the study. The inclusion criteria for this study were undergone dialysis treatment for at least 3 months, patients aged above 18 years. Patients who could not read and write Turkish and having history of impaired cognitive functions were excluded from the study. The study was completed with 151 patients since 6 refused to participate in the study responded (96%).

The patients were informed about the purpose of the study and were asked to give consent to participate in the study. An appropriate time was determined for the patients who agreed to participate in the study and the questionnaires were applied.

Data collection

Data of the study were collected with the help of the Personal Information Form involving the descriptive features of patients, as well as the Index of Activities of Daily Life (ADL), Standardized Mini-Mental State Examination (MMSE), Beck Depression Inventory (BDI), and WHOQOL Brief Quality of Life Scale. Patients were assessed to determine whether they matched the inclusion criteria for the study. Data collection forms were applied to patients matching the criteria in face-to-face interview. Literate patients read and filled out the forms by themselves while illiterate patients filled out the forms with the help of the researcher who read the forms to them. Completion of data collection forms for each patient took 15-30 min.

Personal information form

A patient presentation form was prepared by the researchers in accordance with the literature review. In this form, information about the characteristics of the patients related to hemodialysis and demographic variables [2-6].

Independence in Activities of Daily Living (ADL): Responses to the scale are scored as 0 and 1. 1- the activities they can independently, 0- the activities they are dependent on. The total total score was 14 points. (6 points in ADL and 8 points in AGYA). In this index 0-7 points are dependent, 8-14 points are considered independent [10].

Standardized Mini-Mental State Examination (MMSE): Being developed by Folstein, et al. (1975), this scale is an easily-applied test that gives information about the degree of the cognitive disorder [11]. This test consists of subscales evaluating the orientation, registration, attention-calculation, recall, language tests, and configuration. The test uses different cut-off points and the scores of 23 and below are generally accepted as the indicator of a cognitive disorder. The highest score to be obtained from the scale is 30. As a result of scoring, the scores between 21-23 indicate a mild cognitive disorder; whereas scores of 20 and below indicate mod-

erate and severe cognitive disorders. While mild cognitive disorders are signified as clinical problems regarding the work and social environment that would enable the individual to sustain her/his life without needing any help, the moderate and severe cognitive disorders may require some help to sustain the life.

WHOQOL brief quality of life scale: Being developed by the World Health Organization, the scale consists of 26 questions about the generally perceived quality of life. The Turkish validity and reliability study of the scale was performed by Eser, et al. [12]. The WHOQOL-Bref-TR version of the scale consists of 27 questions due to a national question that was added during the Turkish validity studies of the scale. The scale involves the physical health field, mental health field, social field, as well as environmental and national fields. WHOQOL-Brief is calculated on the basis of 20 points. High of the score obtained from the scale signifies the high of quality of life.

Beck Depression Inventory (BDI): Beck Depression Inventory (BDI); In 1979, Beck, et al. [13]. The Turkish validity and reliability study of the BDI developed by Bilgin in 1988 was performed by Hisli [14]. BDI is a self-report scale that measures emotional, somatic, cognitive, and motivational symptoms in depression. The BDI; There are a total of 21 symptom categories that measure 11 cognition, 2 emotions, 2 clearly defined behaviors, 1 interpersonal problems and 5 somatic symptoms. Each item consisting of four items is scored between zero and three. Total depression score is obtained by collecting these scores. The total score range is 0-63. A high total score indicates a high level of depression or severity. It was determined that the scores of BDI 17 and above were able to differentiate depression which would require treatment with accuracy of more than 90%. The aim of the scale is not to diagnose depression, but to determine the degree of depression symptoms objectively.

Data evaluation

SPSS 15 statistics program was used for data analysis. Pearson correlation coefficient was used for the relationship between the evaluation parameters in descriptive analysis and statistic analysis in data evaluation.

Ethical dimension of the study

Permission was obtained from the relevant institution. Considering the principle of informed consent; all the patients were informed about the aim and importance of the study in detail and their consent was obtained.

Results

Patients who participated 50.4% were female, 58.3% were married, 52.4% were illiterate, 55.1% had less income than expenditure, 51.4% lived in the city and

had an average age of 55.42 ± 9.24 ; (Table 1).

This study was detected that 60.1% of patients had been diagnosed time for ≥ 36 months Among the causes of chronic renal failure were artherosclerotic heart disease ($n = 63$, 43.6%), hypertension ($n = 122$, 84.5%), and diabetes ($n = 56$, 39.0%). Most participants, (92.6%) were vascular access type of fistula, 48.3% patients were $BDI \geq 30 \text{ kg/m}^2$ (Table 2).

When the distribution of the patients according to their physical disabilities were examined, it was determined that patients who had vision, movement

Table 1: Socio-demographic characteristics of patients.

Variables	Number	%
Gender		
Female	73	50.4
Male	72	49.3
Educational status		
Illiterate	75	52.4
Literate	52	36.3
Primary school and above	18	11.3
Marital status		
Married	84	58.3
Single	61	41.7
Levels of income		
More income than expenditure	18	12.9
Equal income and expenditure	46	32.0
Less income than expenditure	81	55.1
Patient's residence		
Province	74	51.4
District	36	25.4
Village	35	23.2
Total	145	100

and tasting problems could not perform their daily living activities independently (Table 3).

Examining the relationship between the features of HD and the dependence level; it was determined that patients who had had HD for more than ≥ 36 months,

Table 2: Features of patients concerning the disease.

Variables	Number	%
Diagnosis time		
≤ 12 months	15	9.6
13-35 months	43	30.3
≥ 36 months	87	60.1
Vascular access type		
Fistula	80	55.4
Graft	42	29.2
Catheter	23	15.4
State of having another disease apart from renal failure		
Yes	104	72.1
No_	41	27.9
BMI		
$BMI < 25 \text{ kg/m}^2$	22	15.3
$BMI 25-29.9 \text{ kg/m}^2$	52	36.4
$BMI \geq 30 \text{ kg/m}^2$	71	48.3
Renal failure -associated complications		
Hypertension	122	84.5
Diabetes	56	39.0
Atherosclerotic heart disease	63	43.6
Congestive heart failure	51	35.0
Peripheral vascular disease	40	27.6
Total	145	100

*Patients with multiple complications.

Table 3: Distribution of dependence states of patients according to their physical deficiencies.

DLA Dependence State									
	Fully dependent		Semi-dependent		Independent		Total		p
	Number	%	Number	%	Number	%	Number	%	
Deficiency type									
Seeing	10	27.1	12	32.2	15	40.7	37	25.5	0.001
Hearing	5	20.0	7	28.0	13	52.0	25	17.2	
Moving	18	27.6	20	30.7	27	41.7	65	44.8	
Tasting	5	25.3	7	9.1	6	65.6	18	12.5	
Use of Instrument/Prosthesis/Device									
Using	23	26.5	35	40.2	29	33.3	87	60.0	0.825
Not Using	11	19.3	28	48.0	19	32.7	58	40.0	
Type of Instrument/Prosthesis/Device									
Glasses	8	32.0	12	48.0	5	20.0	25	17.2	0.001
Hearing aid	7	35.0	5	25.0	8	40.0	20	13.7	
Extremity prosthesis	14	40.1	8	22.8	13	37.1	35	24.1	
Walking stick	20	13.5	27	41.5	18	27.6	65	45.0	

Table 4: Distribution of dependence states of dialysis according to their physical deficiencies.

DLA Dependence State									
	Fully dependent		Semi-dependent		Independent		Total		P
	Number	%	Number	%	Number	%	Number	%	
<u>Diagnosis time</u>									
≤ 12 months	5	25.0	7	35.0	8	40.0	20	13.7	0.001
13-35 months	12	35.4	10	29.4	12	35.2	34	23.4	
≥ 36 months	42	46.3	15	16.4	34	37.3	91	62.9	
<u>Vascular access type</u>									
Fistula	31	58.6	22	15.1	19	26.3	72	49.6	0.001
Graft	10	32.3	12	38.7	9	29.0	31	21.3	
Catheter	15	35.8	14	33.3	13	30.9	42	29.1	
<u>State of having another disease apart from renal failure</u>									
Yes	37	22.2	38	34.5	22	43.3	97	36.6	0.001
No	15	31.2	15	31.2	18	37.6	48	63.4	
<u>BMI</u>									
BMI < 25 kg/m ²	7	22.0	15	46.8	10	31.2	32	22.0	0.001
BMI 25-29.9 kg/m ²	14	26.1	19	35.1	21	38.8	54	37.2	
BMI ≥ 30 kg/m ²	27	45.8	14	23.7	18	30.5	59	40.8	
<u>Renal failure -associated complications</u>									
Hypertension	4	17.5	11	47.8	8	34.7	23	19.3	0.001
Diabetes	14	56.0	6	24.0	5	20.0	25	15.1	
Atherosclerotic heart disease	13	42.0	8	25.8	10	32.2	31	12.2	
Congestive heart failure	8	40.0	5	25.0	7	35.0	20	16.3	
Peripheral vascular disease	23	50.1	11	23.9	12	26.0	46	37.1	

*Patients with multiple complications.

Table 5: Distribution of mean scores of Beck Depression and WHOQOL brief quality of life.

WHOQOL Brief Quality of Life Subscales	X ± SS	Max.	Min.
Physical	8.23 ± 1.20	10.0	3.0
Psychological	9.58 ± 1.17	11.0	3.0
Social relationship	6.96 ± 1.41	12.0	5.0
Environment	5.63 ± 1.52	12.0	6.0
Total	11.78 ± 5.10	16.0	2.0
Beck Depression Scale	21.36 ± 4.19	40.0	10.0
Standardized Mini-Mental State Examination	4.00 ± 1.20	6.0	1.0
Independence in Activities of Daily Living	4.89 ± 1.55	10.0	1.0

vascular access type of fistula, had other disease than renal failure, BMI ≥ 30 kg/m² and experienced HD complications remained insufficient in carrying out their daily life activities independently (Table 4).

The patients who participated in the study were observed to have low cognitive levels (5.63 ± 1.52) and life qualities (11.78 ± 5.10) and high levels of depression (21.36 ± 4.19).

We see the results of patients, who participated in the study, regarding their quality of life, daily life activities, depression levels and cognitive conditions (Table 5).

Examining relationship between ADL, quality of life, depression, and cognitive conditions of patients; there was a positive and statistically significant relationship between ADL ($r = 0.769$, $p < 0.001$) and quality of life, and a negative and statistically significant relationship between depression ($r = -0.785$, $p < 0.001$) and cognitive disorder ($r = -0.945$, $p < 0.001$) (Table 6). It was concluded that with the increase of their independence levels in ADL, the life qualities of patients increased and their depression and cognitive disorders decreased.

Discussion

It was determined that 60.1% of the patients diagnosed time ≥ 36 months, and that 55.4% had vascular

Table 6: Correlation of mean scores of Beck Depression and WHOQOL brief quality of life.

Ölçekler	ADL	
	r	p
WHOQOL Brief Quality of Life Scale	0.769	p < 0.001
Beck Depression Scale	-0.785	p < 0.001
Standardized Mini-Mental State Examination	-0.945	p < 0.001

access type by fistula, 72.1% had one or more chronic disease apart from HD and associated complications. When the literature is examined, different chronic diseases added to chronic renal failure have shown that patients' life is restricted. These restrictions most often cause adverse changes in nutrition and lifestyle. It shows that patients have difficulty in taking the responsibility for their personal care [15-17].

This study revealed that a great majority of patients experienced complications associated with HD, which prevented them from meeting their activities of daily life and self-care needs independently. In addition, patients with a low mean score in ADL (4.89 ± 1.55), who had problems, moving, seeing, tasting (4.89 ± 1.55), were not able to independently perform daily living activities. These patients independently perform activities that are difficult using auxiliary devices (walking stick, glasses, prostheses).

In this study, it was determined that the physical performance decrease of patients receiving HD treatment. Studies on patients receiving HD determined that physical activity is reduced and they have difficulty in performing daily living activities independently [18-20]. Our study showed that HD patients had limitations in their daily living activities in accordance with the literature.

As a result of this study, it was determined that while mean score of depression was high, the mean scores of quality of life and cognitive condition were low (Table 5).

When literature is examined, it is determined that depression is common in HD patients and prevalence rates are between 30% and 60% and 20% and 70% respectively [21-23]. In a meta-analysis study conducted with chronic dialysis patients, the prevalence of depression was reported to be 22.8%-27.6% [23]. The prevalence of depression in chronic dialysis patients was found to be high in the studies performed by clinicians, with 39.3% and 42.0% [24]. These results showed that patients with HD (16-18) and kidney failure had high rates of depression and low quality of life. In addition, increased morbidity and mortality in these patients [24-26]. When the relationship between depression and mortality in HD patients was examined, it was observed that it was caused by dialysis treatment, malnutrition and chronic inflammation [27,28].

Examining relationship between ADL, quality of life, depression, and cognitive conditions of patients; there was a positive and statistically significant relationship between ADL ($r = 0.769$, $p < 0.001$) and quality of life, and a negative and statistically significant relationship between depression ($r = -0.785$, $p < 0.001$) and cognitive disorder ($r = -0.945$, $p < 0.001$) (Table 6).

In studies in people with chronic renal failure, with the increase in symptoms of depression, physical activity decreases [29-32]. Physical activity or regular exercise in older adults and overweight or obese individuals has been shown to reduce the rate of depression [27].

Individuals with exercise, emotional, depression, substance abuse or dependence are more likely to have a higher quality of life related to health [32]. In young men and women with major depression, their pattern of symptoms appears to vary according to whether or not they are physically more active [33].

There was a negative correlation between depression and physical performance in HD patients. A negative correlation was found between depression, quality of life and physical performance. As physical exercise increased, quality of life increased and depression decreased. It also shows that physical exercise can reduce symptoms of depression in people with renal impairment [34-38].

Conclusion

As a result of this study conducted in order to determine the compliance of adaptation of dialysis patients to activities of daily life and evaluation of quality of life; It was concluded that patients had insufficiency in their daily life activities, tried to complete their physical deficiencies by using assistive tools, and they had high levels of depression and low levels of life quality.

According to these results; it is recommended to determine the factors that decrease or increase the dependence levels of patients, conduct screenings on patients regarding the depression at the beginning of treatment and provide them with a psychological support according to the result of this screening in order to increase their quality of life.

Limitations

The study only included patients at a hospital. Our results cannot be generalized to all hemodialysis patients. Further research is needed to assess the activities of daily living and quality of life to dialysis patients.

Conflicts of Interest

There is not any conflict interest in our manuscript.

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