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Determination of self-care power of hemodialysis patients

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Abstract

This study was designed as a descriptive-cross-sectional study in order to determine self-care ability in hemodialysis patients. The study was conducted with participation of 254 patients who received treatment in three dialysis centers between November 1, 2015 and January 30, 2016, who volunteered to participate in the study and were able cooperate with the researchers. The data were collected using a questionnaire comprised of 17 items and Self-Care Agency Scale. Self-Care Agency Scale was developed in 1979 by Kearney and Fleischer and was adapted to Turkish by Nahçivan. It is a Likert-type scale comprised of 35 items. The minimum possible score is 35, the maximum possible score is 140. Higher scores show greater self-care ability. Data were evaluated by calculating percentages and using one-way ANOVA, t-test, and Tukey test. Of all the study participants, 46.5% were female and 53.5% were male; 36.2% were primary school graduates; 98.4% had a social security; 84.3% had income levels that were equal to their expenditures; 68.5% lived in city centers. Mean age of the participants was 58.2 ± 12.9years. 80.3% of the patients had accompanying chronic disease; 39.4% have been undergoing dialysis for 1-5 years; 96.1% were undergoing dialysis for 3 times a week; 54.3% described their health as good; 53.5% had changes in their daily life activities due to dialysis treatment; and 29.9% had their familial and social life affected by dialysis treatment. The mean total score from Self-Care Agency Scale was calculated as 112.4 ± 10.3. Self-Care Agency Scale score was found to correlate with some sociodemographic and clinical features of the patients ($p<0.05$). It was found that patients had above intermediate level of Self-Care Agency Scale scores. In light of the study results, it is recommended that patients are educated to further improve their self-care ability.

Keywords: Hemodialysis, Self-care, Behavior, Knowledge, Application.

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1. Introduction

Chronic renal failure (CRF) is progressive, irreversible degradation of the function at both kidneys (Akbayrak, Hatipoglu, Sener, 2007). Dialysis therapy is an important treatment method for CRF and prolongs patients' lifespan. The goal in hemodialysis treatment is to replace the degraded renal functions as much as possible, as well as to improve patient's life quality. Patients undergoing hemodialysis because of CRF may experience various problems such as restriction of their fluid intake and diet, drug side effects, fatigue, uncertainty about future, change in roles inside the family, loss of job and problems related to work life, financial difficulties, dependence on a machine, loss of time spent during therapy, and sexual dysfunction (İbrahim and Yorulmaz, 2011). In this respect, it is essential that patients undergoing hemodialysis treatment have self-care ability, and take life-long responsibility of their own treatment and care (Akyol and Karadakovan, 2002).

Self-care is a positive action including an approach oriented at both application and treatment, and it is related to many factors such as human, environment, culture and daily life values (Muz and Eglence, 2013). Self-care ability implies the individual's ability to conduct self-care activities. Several factors and conditions such as age, developmental state, health state, and healthcare system influence individual's self-care ability. It has also been reported in the literature that self-care activities are learned by individuals, and are influenced by beliefs, habits, and practices (Nahcıvan, 2004). Self-care has also an important value in the individual management of CRF. An individual who was diagnosed with CRF and who has adequate self-care ability can meet his/her self-care requirements adequately and properly, can take his/her own healthcare responsibility, and can continue daily activities without being dependent on others (Muz and Eglence, 2013). In this respect, in order to determine self-care abilities and factors affecting this condition, and to develop proper strategies in accordance with patients' requirements, there is a need for studies that identify diversities between countries, regions, and cultures, and for findings and knowledge gained through these research. It is thought that findings of the present study will aid national and local action plans in developing proper strategies aimed at improving self-care abilities and life qualities of hemodialysis patients.

1.1. The Aim of the Study

The study was designed as a descriptive cross-sectional study with the aim of identifying the factors affecting self-care ability of patients undergoing hemodialysis treatment in three dialysis centers in Samsun province, which is located in the north of Turkey. This study inquires answers to these questions:

- What is the level of self-care ability among hemodialysis patients?
- What are the sociodemographic and clinical features that affect the self-care ability of hemodialysis patients?

2. Material and Method

2.1. Study place and time

This descriptive, cross-sectional study was conducted between November 1, 2015 and January 30, 2016 at three dialysis centers located in Samsun province in the north of Turkey.

2.2. Study population and sample

The study was conducted with the participation of 254 hemodialysis patients who were being treated at the hemodialysis centers where the research was conducted at the relevant dates, and the patients were selected using non-probability sample selection method. The study included patients volunteering to participate in the study who were diagnosed with chronic renal failure, who did not have psychological or mental problem, who had unaltered mental state, and who could communicate verbally. It was targeted to reach all patients receiving treatment in the hemodialysis centers where the research was conducted; however,

the study was conducted with the participation of 254 hemodialysis patients after exclusion of those who did not approve participation (n=49), and those who did not fill the questionnaire completely (n=17). The response rate of the questionnaire form was 79.3%. The dependent variable of the study was the self-care ability of the patient. The independent variables of the study were the sociodemographic and clinical features of the patient.

2.3. Data collection tools

The study data were collected using a questionnaire describing the individual patient and Self-Care Agency Scale. The questionnaire consisted of 17 items to describe patient's sociodemographic (age, gender, education, marital state, socioeconomic state, family type, number of children, social security state, place of living) and clinical (perception of own health, presence of any comorbidity accompanying renal failure, and if so, accompanying diseases, number of years patient has been undergoing dialysis, frequency of dialysis treatment, affection of daily life activities due to dialysis treatment, and if so, the daily life activities affected by dialysis treatment, affection of familial and social life, and if so, the changes that occurred in familial and social life) properties.

2.3.1. Self-Care Agency Scale

The exercise of Self-Care Agency Scale was developed by Kearner and Fleischer (1979), and validation and reliability study for Turkish version was conducted by Nahcivan (1993). The original scale consists of 43 statements, and since all items could not be adapted to Turkish population, Nahcivan reduced the Turkish version to 35 items. This scale is the most commonly used scale for assessment of self-care after the concept of self-care has been introduced. The scale focuses on self-evaluations of individual self-caring behavior. Each item of the scale is scored from "0" to "4", and the evaluation is based on the response of the participants on the 5-point Likert type scale. The lowest score that can be obtained from this scale is 35, the highest score is 140. The higher scores indicate that the self-care ability of the patient is high (Nahcivan, 1993). In the present study, Cronbach alpha internal consistency coefficient of the scale was calculated as 0.73.

2.4. Data collection

The questionnaire and the scale were initially tested on a group of 5 individuals. The items that could not be easily understood, or those that contained some faults were identified, and after this pilot study, the draft was corrected to its final version. This study conforms to the ethical standards of the Helsinki Declaration. The data was collected with a face-to-face interview method by the researchers after obtaining informed consent from each participant. After informing each participant about the study, the questionnaire and Self-Care Agency Scale were completed. The patients were informed that they were completely free to decide about participation in the study, that their names will not be specified on the questionnaire forms, and that all data collected in the study were going to be used only for the purpose of the present research. The interview lasted approximately 10-12 minutes with each participant.

2.5. Data evaluation

The statistical analysis of the collected data was performed in a computer environment using SPSS v15.0. statistical package program. The normality test of the quantitative data was done with Shapiro Wilk method. For the evaluation of the data with normal distribution, one-way ANOVA, t-test, and Tukey test were used. The results were presented as percentages, means, and standard deviations. Statistical significance level was accepted as $p<0.05$.

3. Results

The study included 254 hemodialysis patients. Of these patients, 46.5% were women; 53.5% were men; 36.2% were primary school graduates; 94.9% were married; 79.5% had a nuclear type of family; 89% had a child; 98.4% had social security; 84.3% had income that is equal to their expenses; 68.5% lived in city center. Mean age of the participants was 58.2 ± 12.9years (Table 1). Of the patients, 80.3%

had comorbid chronic diseases; 61.4% had hypertension, 22.8% had diabetes, and 21.3% had coronary artery disease; 39.4% have been undergoing dialysis for 1-5 years; 96.1% underwent dialysis 3 times a week, and 54.3% defined their health status as good (Table 2).

It was found that 53.5% of the patients had changes in their daily life activities due to dialysis treatment; and affected daily life activities were mobilization in 70.6%, eating-drinking in 47.1%, working and entertainment in 16.2%, sleep in 11.8%, communication in 7.4%, and respiration in 4.4%; 29.9% of them had changes in their familial and social lives due to dialysis treatment; 36.8% had to quit their jobs, 31.6% were unable to fulfill their family responsibilities, 31.6% could not travel, 15.8% had financial problems, 7.9% had to move to another location, and 2.6% experienced social isolation (Table 2).

The mean total score from Self-Care Agency Scale was calculated as 112.4 ± 10.3. Among the Self-Care Agency Scale items, patients got the highest scores from the 5th item: "I am proud of doing things that I need to be healthy," 11th item: "I try to have a better health," 27th item: "I take responsibility for my own behavior," and the 33rd item: "I feel that I am a valuable member of my family ;" and patients got the lowest scores from the 22nd item: "It is merely a chance for me that my health is better," from the 31st item: "I sometimes do not care about my discomfort when I am sick, and I just wait to get better," from the 3rd item: "I do not usually have enough energy to meet my health needs as I desire," and the 26th item: "I cannot adequately fulfill my duties within my family" (Table 3).

It was found that total score from Self-Care Agency Scale showed correlation with some sociodemographic and clinical properties of patients. Mean Self-Care Agency Scale scores were higher among those who were secondary school graduates ($F = 2.564$, $p = 0.39$), who were living in countries ($F = 5.732$, $p = 0.004$), and who did not have any chronic disease apart from renal failure ($t = 2.956$, $p = 0.004$). Patient's mean total Self-Care Agency Scale scores did not show correlation with other sociodemographic or clinical properties, including age, gender, marital state, number of children, family type, social security status, income status, health perception status, dialysis treatment, duration of dialysis, presence of change in daily life activities due to dialysis treatment, and presence of change in familial and social life due to dialysis treatment ($p > 0.05$).

4. Discussion

The present study was conducted with the aim of determining self-care abilities of hemodialysis patients, and the results showed that patients had above intermediate scores from Self-Care Agency Scale. 80.3% of the patients had another chronic disease accompanying renal failure, including hypertension, diabetes, coronary heart disease, in decreasing order of frequency. More than one-third of the patients have been undergoing dialysis treatment for 1-5 years. Almost all of the patients received dialysis treatment 3 times a week, and nearly half described their health in good status. In their study, Muz and Eglence (2013) evaluated self-care ability and self-efficacy in hemodialysis patients, and they reported that 53% of patients had a diagnosis duration of 0-6 years; 88% underwent dialysis treatment twice a week, and 95.3% had another chronic disease accompanying chronic renal failure. Their results were in agreement with our study results.

We found that 53.5% of patients experienced changes in their daily life activities due to dialysis treatment, and the affected activities were mobilization, eating-drinking, working and entertainment, sleep, communication and respiration, in decreasing order of frequency. Familial and social lives were also affected by dialysis treatment; nearly one-third of the patients had to quit their jobs, failed to fulfill their familial responsibilities, could not travel, had financial difficulties, had to move to another location because of their treatment, and experienced social isolation. In support of our study results, in their study examining social role changes, expectations and problems experienced by hemodialysis patients because of their disease, Gunler (2011) reported that patients could partially fulfill their role as a mother, father, spouse, son or daughter, or as a friend, could not fulfill their work or occupation-related roles and education roles as much as they desired, and that 71.3% of patients experienced

some dietary changes due to their disease. It was also reported in that same study that, participants reduced their strolling activities, their visits to friends, relatives and neighbors, and their travelling activities, experienced difficulty in communicating with their inner circle, that the number of people they have been seeing decreased after their illness, and that they occasionally experienced feeling of solitude.

The mean total score from Self-Care Agency Scale was calculated as 112.4 ± 10.3 in our study. This score was reported as 107.42 ± 13.03 in the study by Kıyak and Erguney (2002); 99.86 ±15.30 in the study by Bag and Mollaoglu (2010); 113±18.33 in the study by Unsar, Erol and Mollaoglu (2007); and 99.72±16.11 in the study by İlhan (2011). The mean scores from Self-Care Agency Scale varies among different studies; nonetheless, this variation is thought to arise from sociodemographic and clinical properties of patients.

It was observed that patients' mean total score from Self-Care Agency Scale did not correlate with age, gender, marital status, number of children, family type, social security status, income status, health perception status, time elapsed after initiation of dialysis treatment, frequency of dialysis treatment, affection of daily life activities, or affection of familial and social life due to dialysis treatment; but on the other hand, it was observed that patients who were secondary school graduates, who lived in counties, and who did not have any chronic disease accompanying renal failure had higher mean scores from Self-Care Agency Scale.

In their study, Muz and Eglence (2013) reported that patients who were literate, who defined their income level as poor, who lived in rural areas, and who had the disease for over 13 years had lower self-care ability; but on the other hand, patients who received dialysis twice a week, and who did not have any other chronic disease had higher mean scores from Self-Care Agency Scale. In another study by Kıyak and Erguney (2002), mean Self-Care Agency Scale scores were found to be higher in patients who mere married, employed and had good income.

In another study, Bag and Mollaoglu (2010) reported an association between self-care ability and education, employment status, income level, and frequency of dialysis treatment. Akyol and Karadakovan (2002) found that there was no correlation of mean Self-Care Agency score with patient's gender, marital status, age group, education level, social security state, disease age or presence of another disease accompanying chronic renal failure.

In another study by Unsar, Erol, and Magar (2007), mean Self-Care Agency Scale score was found to be correlated with gender, perception of own health, experience of a problem during dialysis, and affection of family life by dialysis; and mean Self-Care Agency Scale score was found to be higher in patients who were male, described their health status as good, adhered to their diet, did not experience a problem during dialysis, and did not have their family life affected by dialysis treatment. Another study on this subject reported high self-care ability in patients who were female, aged between 41-59 years, married, high school graduate, and described their socioeconomic level as good, while employment status and occupation did not have an effect on their self-care ability (İlhan and Yorulmaz, 2011). Although the factors affecting patients' self-care ability differs among studies, it is thought that this may be influenced by individual characteristics, ability to cope with the disease, presence of social support systems, cultural properties, and the value that the patient gives to disease and life.

5. **Conclusion**

In this study, we found that patients' Self-Care Agency Scale scores (112.4 ± 10.3) were above the intermediate level. Total Self-Care Agency Scale score showed correlation with patients' education state, place of living, and presence of other chronic disease accompanying renal failure; mean total score from the scale was higher in patients who were secondary school graduate, lived in a county, and did not have any other chronic disease apart from kidney failure. Determination of the patient's self-care ability level is essential in terms of planning patient-specific care and education. In this respect, nurses are recommended to periodically assess the factors affecting patients' self-care

abilities and to plan individual nursing care, provide training and counseling to patients accordingly. In addition, it is recommended that both qualitative and quantitative research methods are used together in the future studies, employing focus group interview method for its advantages.

Limitations of the Study

- One limitation of the present study is that the correctness of statements given by patients during a face-to-face interview was not confirmed with long-term observations.

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We would like to thank hemodialysis patients for their contribution through participation in this study.

Table 1. Distribution of Patients' Sociodemographical Properties (N=254)

PROPERTIES		n	%
Mean age	58.2±12.9		
Age groups	20-35 year-old	14	5.5
	36-51 year-old	54	21.3
	52-67 year-old	120	47.2
	68 year-old and above	66	26.0
Gender	Female	118	46.5
	Male	136	53.5
Education status	Literate	82	32.3
	Primary school	92	36.2
	Secondary school	22	8.7
	High school	36	14.2
	University	22	8.6
Marital status	Married	241	94.9
	Single	13	5.1
Number of children	No children	28	11.0
	1-3 children	122	48.0
	4-6 children	88	34.6
	7-9 children	16	6.4
Family type	Extended family	52	20.5
	Nuclear family	202	79.5
Place of living	Province	174	68.5
	County	60	23.6
	Village	20	7.9
Socioeconomic state	Income < Expense	36	14.2
	Income = Expense	214	84.3
	Income > Expense	4	1.5
Social security	Present	250	98.4
	Absent	4	1.6

Table 2. Distribution of Patients' Clinical Properties (N=254)

PROPERTIES		n	%
How they describe their health status	Good	138	54.3
	Moderate	78	30.7
	Poor	38	15.0
Presence of another chronic disease accompanying renal failure	Yes	204	80.3
	No	50	19.7
***If yes, other chronic diseases (n=204)**	Coronary artery disease	54	21.3
	Diabetes	58	22.8
	Hypertension	156	61.4
Dialysis time	0-11 months	40	15.7
	1-5 years	100	39.4
	6-10 years	80	31.5
	11-15 years	26	10.3
	16 years and above	8	3.2
Dialysis frequency	2 days a week	10	3.9
	3 days a week	244	96.1
Affection of daily life activies by dialysis	Yes	136	53.5
	No	118	46.5
***If yes, affected daily life activites (n=136)**	Mobility	96	70.6
	Eating-drinking	64	47.1
	Work and leisure	22	16.2
	Sleep	16	11.8
	Communication	10	7.4
	Respiration	6	4.4
	Excretion	2	1.5
Effects of dialysis treatment on familial and social life	Yes	76	29.9
	No	178	70.1
***If yes, affected aspects of familial and social life (n=76)**	Having to move to another location	6	7.9
	Quitting job	28	36.8
	Starting to experience financial problems	12	15.8
	Experiencing social isolation	2	2.6
	Starting to fail fulfilling familial responsibilities	24	31.6
	Inability to travel	24	31.6

*More than one answer was given.

Table 3. Mean Self-Care Agency Scale Scores

	Mean±SD
1-If it is about survival, I can willingly quit some of my habits.	3.6±0.8
2-I like myself	3.7±0.6
3-I usually do not have the necessary energy to meet my health requirements as much as I want.	1.3±0.3
4-When I feel my health is deteriorating, I know what I have to do.	3.6±0.9
5-I take pride in doing things that are necessary for my health.	3.9±0.3
6-I tend to neglect my personal requirements.	2.2±1.3
7-I seek help when I do not care for myself	3.5±1.0
8-I like starting new projects.	3.6±0.8
9-I often postpone things that I know are good for me.	2.7±1.0
10-I take certain measures to avoid getting sick.	3.8±0.4
11-I try to have better health.	3.9±.19
12-I have a balanced diet.	3.0±1.1
13-I always complain of things bothering me without doing not much about them.	2.0±1.3
14-I search for better ways of protection to care for my health.	3.7±0.6
15-I believe my health will improve to a very good level.	2.5±0.4
16-I believe I deserve all the efforts for protecting my health.	3.8±0.3
17-I perform my decisions to the end.	3.8±0.4
18-I understand how my body works.	3.5±0.7
19-I seldom implement my personal decisions about my health.	2.0±0.3
20-I am at peace with myself.	3.8±0.4
21-I look after myself well.	3.8±0.4
22-It is a coincidence for me to have better health.	1.0±0.3
23-I regularly rest and do physical exercise.	2.2±1.3
24-I would like to learn how various diseases occur and what kinds of effects they have.	3.5±1.0
25-Life is a joy.	3.8±0.4
26-I cannot fulfill my responsibilities in the family adequately.	1.5±0.5
27-I take responsibility of my own behaviors.	3.9±0.2
28-As the years have passed, I have become aware of the things that are required for having a better health.	3.8±0.6
29-I know what kind of food I should eat to stay healthy.	3.6±0.8
30-I am interested in learning everything about how my body works.	3.7±0.8
31-Sometimes when I get sick, I don't care about my illness and wait for it to improve by itself.	1.1±0.3
32-I try to gain knowledge to care for myself.	3.7±0.7
33-I feel that I am a worthy member of my family.	3.9±0.1
34-I remember the date of my last control visit, as I know the date of my next control visit.	3.4±1.1
35-I understand myself and my necessities quite well.	3.9±0.3
Mean Total Scale Score	112.4±10.3

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