

Effect of Self-care Agency on Symptoms in Patients on Peritoneal Dialysis

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ABSTRACT

Aim: The aim of the study was to evaluate physical symptoms in patients on peritoneal dialysis treatment and to determine the relationship between the socio-demographic features affecting the symptoms and the disease and self-care.

Methods: The sample of this descriptive study included 120 patients who were followed in the peritoneal dialysis clinic of 2 hospitals in the center of Trabzon. The data were collected using the “patient information form,” “The Dialysis Symptom Index (DSI),” and “The Self-Care Agency Scale for Chronic Dialysis Patients.”

Results: In this study, 60.8% of the participants were women. The most common symptom (64.2%) was constipation. There was a significant difference in the mean DSI score between the patients supported during dialysis and those who were not and the mean DSI score was higher in the patients supported during dialysis ($P < .05$). In addition, there was a significant difference in terms of the mean self-care agency score between the patients supported during dialysis and the patients who were not. Contrary to the DSI mean score, the mean self-care agency score was higher in patients who were not supported during dialysis ($P < .05$). A significant negative correlation was found between self-care agency and DSI ($r = -0.288, P < .01$).

Conclusion: The study demonstrated that patients lacking self-care agency have to cope with both more symptoms and more severe symptoms.

Keywords: Nursing, peritoneal dialysis, symptoms

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Received: June 23, 2020 **Accepted:** November 5, 2020

Cite this article as: Akbal Y, Nural N. Effect of self-care agency on symptoms in patients on peritoneal dialysis. *Turk J Nephrol.* 2021; 30(2): 130-137.

INTRODUCTION

Chronic kidney disease is increasing rapidly. The ideal treatment for end-stage renal failure is kidney transplantation, in which all functions of the kidney are improved. However, due to the limited availability of transplantation, most of the patients continue their lives by dialysis. Although there are some differences, hemodialysis is the most preferred renal replacement therapy (RRT) method in the world. In Turkey, the ratios of hemodialysis (HD)/peritoneal dialysis (PD) are 78.85% and 7.24%, respectively. Compared to previous years, the number of patients on PD is gradually decreasing.¹ The transition of patients to hemodialysis treatment creates a serious burden both on individuals and on the health system.² A study determined that 18% of patients who

started dialysis treatment with PD were reported to undergo HD in the first year.³

End-stage renal failure is an important disease in which chronic symptoms are observed, patients' work and family life change, and self-care and self-efficacy are affected, which causes changes in individuals' future planning and lifestyle due to psycho-social problems. Symptoms such as fatigue, cramping, pain, sleep disturbance, dyspnea, depression, nausea, vomiting, and constipation related to dialysis negatively affect all areas of the individual's daily life and self-care. In addition to these symptoms which are frequently experienced by patients on dialysis, there are also limitations in their social lives and difficulties in performing their physical activities.⁴



According to Orem's Self-Care Deficit Theory, there is a close relationship between self-care behaviors and health.⁵ The patient's ability to recognize and manage signs and symptoms related to PD is associated with self-care. A component of self-care is to recognize dialysis-related signs and symptoms such as peritonitis (abdominal pain, nausea, vomiting, weakness, constipation, or diarrhea) and fluid imbalance (hypotension, weakness hypertension, edema, and dyspnea). Self-care behaviors in patients with kidney failure include a range of individual activities to help cope with dietary compliance, regular use of medication, fluid restriction, stress, and symptoms. Serious complications such as hopelessness and depression can develop in patients lacking self-care in addition to fluid restriction and lifestyle change.⁶ In order to provide appropriate nursing care to patients, it is important to determine the symptoms experienced, the self-care behaviors that are necessary for the control of these symptom, and the factors that affect these behaviors. Nurses are usually able to identify possible causes before the patient is affected and take precautions to eliminate their source.

Improving patient outcomes related to PD requires an evaluation of the self-care process, symptoms, and practices attributed to nursing care. This study was conducted to evaluate the frequency of symptoms in patients on PD and to determine the relationship between the socio-demographic and disease-related features that affect them and the self-care behaviors developed. The data obtained from this study are expected to contribute to efficient and sustainable PD and nursing care.

MATERIALS AND METHODS

Sample

To conduct the study, ethics committee approval and institutional written permission were obtained (REF: 314/2015). The participants were informed about the research, and their verbal and written consent was received. The research was conducted voluntarily.

The sample in this descriptive study included 120 patients who underwent PD in 2 hospitals in the center of Trabzon between March 2015 and March 2016. Those who were aged 18 and above without any psychiatric diagnosis and who could verbally communicate were recruited in the sample. The exclusion criteria were patients undergoing HD.

MAIN POINTS

- Nurses should monitor symptoms intermittently in patients undergoing PD.
- The relationship between patients' self-care agency and symptoms should be taken into account.
- Nurses should plan nursing interventions to increase self-care agency in patients who undergo PD.

Data Collection Tools

The data were collected through the patient information form created by the researcher, the Dialysis Symptom Index (DSI), and the Self-Care Agency Scale for Chronic Dialysis Patients.

Patient Information Form

The first part of the patient information form created by the researcher by scanning the literature^{7,8} included 6 questions to determine the socio-demographic characteristics of the patients (gender, age, marital status, educational status, occupation, and habits). In the second part, there are a total of 10 questions including 4 questions regarding the clinical features of the patients (duration of PD administration, patients' state of receiving support, the patients' state of being supported by the family and social environment, and the type of support the patient need).

Dialysis Symptom Index

The Dialysis Symptom Index, inspired by the Memorial Symptom Assessment Scale Short Form (MSAS-SF), consists of 30 items and covers the symptoms that patients have experienced in the last 7 days. Patients first start answering the index as yes-no. Those with a yes answer then state how much the symptoms affect them on a 5-point Likert scale: 0 = none, 1 = never, 2 = a little, 3 = sometimes, 4 = very little, 5 = too much. The total score obtained by summing up the scale varies between 0 and 150. As the mean score obtained in the scale assessment increases toward 150, the frequency of symptoms increases, and as the mean score decreases toward 0, the frequency of symptoms decreases.⁹ In this study, Cronbach's alpha value was found to be 0.88.

The Self-Care Agency Scale for Chronic Dialysis Patients

Composed of 22 items and 5 sub-dimensions by Ören, the Self-care Agency Scale is evaluated with a 3-point Likert scale from 0 to 2. In the scale, the patients are asked to evaluate their self-care behavior according to their daily life practices. Items 12, 22, 23, and 25 were reversed in the scale, and so the scoring of the items is summed up by reversing. The total score average ranges from 0 to 44 on the scale. The sub-dimension mean scores are as follows: the use of medicine 0-12, diet 0-10, self-monitoring 0-8, hygienic care 0-8, and mental state 0-6.⁷ The Turkish validity reliability was performed by the scale owner in 2010. The Cronbach's alpha value was found to be 0.74 in the study.

Statistical Analysis

All data were analyzed using Statistical Package for the Social Sciences (SPSS) version 21.0 (IBM SPSS Corp.; Armonk, NY, USA). The percentage frequency, standard deviation, and mean scores were used to calculate the patient characteristics and clinical features. The conformity of the data to normal distribution was determined by using Shapiro-Wilk and Kolmogorov-Smirnov tests, and $P < .05$ was considered statistically significant. One-way analysis of variance test, Mann-Whitney U test, Kruskal-Wallis test, and correlation analysis were used in the data

analysis. In case the Kruskal–Wallis analysis result was found to be significant, the Mann–Whitney *U* test with Bonferroni correction was used to determine which groups had a significant difference. Post hoc Tukey test was used to evaluate the difference in the one-way analysis of variance. Spearman Correlation analysis was used for correlation analysis.

RESULTS

In this study, 60.8% of 120 participants were male, and their mean age was 48.93 ± 14.60 years. 78.3% of them were married, 47.5% were elementary school graduates, 34.2% were housewives, and 14.2% were smoking. Fifty-five percent of those who were on PD with a mean of 4.07 ± 2.77 years received support. In this study, 25.8% of the patients were supported by their spouses and 20.8% by their children. The majority stated that they were psychologically supported during the preparation of the intervention (33.3%) (Table 1).

The symptoms most frequently experienced by the patients in the last week were constipation (64.2%), feeling nervous (62.5%), difficulty falling asleep (60.8%), difficulty maintaining sleep (60.0%) feeling sad (59.2%), and fatigue (58.3%). Itching (2.17 ± 1.06) had the highest symptom mean item score, and it was followed by dryness of skin (2.16 ± 1.14) and fatigue (2.07 ± 1.06) (Table 2).

According to the Dialysis Symptom Index scale, patients on PD were found to be affected by dryness of skin (9.2%), itching (8.3%), fatigue (8.3%), difficulty falling asleep (5.8%), dryness of the mouth (5.8%), and Difficulty in maintaining sleep (5.0%) “too much” (Table 2).

According to the correlation analysis, a statistically significant negative correlation was found between age, self-monitoring ($r = -0.238$), and hygiene sub-dimension scores ($r = -0.185$) ($P < .05$). As age increases, self-monitoring and hygiene sub-dimension mean scores decreased. According to the correlation analysis, a positive significant correlation ($P < .01$) was found between the duration of PD administration ($r = 0.256$) and the self-monitoring dimension total score (Table 3).

Self-monitoring score was higher in single patients than in married patients ($P = .009$), whereas there was no significant difference between single patients and married patients in terms of DSI, use of medicine, diet, hygienic care, mental state, and total score of the Self-care Agency scale ($P > .05$). There was no significant difference among the 3 groups divided by education level with regard to all parameters ($P > .05$). There was a statistically significant difference among the 3 groups divided by cigarette smoking status with regard to use of medicine, self-monitoring, and total score of the Self-care Agency scale (0.007, 0.019, and 0.006, respectively). Use of medicine, self-monitoring, and total score of the Self-care Agency scale were significantly lower in the ex-smoker group compared to the never smoked group and the smoking group, whereas there was no significant difference

Table 1. Socio-demographic Parameters

Parameters		Mean \pm SD	<i>n</i>	%
Mean age		48.93 \pm 14.60		
Gender	Female		47	39.2
	Male		73	60.8
Marital status	Married		94	78.3
	Single		26	21.7
Educational level	Literate/illiterate		33	27.5
	Elementary school		57	47.5
	High school and over		30	25.0
Occupation	Housewife		41	34.2
	Civil servant		12	10.0
	Unemployed/student		27	22.5
	Retired		40	33.3
Cigarette smoking	Yes		17	14.2
	No		81	67.5
	Ex-smoker		22	18.3
Duration of peritoneal dialysis		4.07 \pm 2.77		
Patient's state of being supported	Yes		66	55.0
	No		54	45.0
Who supports the patient*	Spouse		31	25.8
	Children		24	20.8
	Other family members		18	15.0
	Health professionals		4	3.3
The type of support patients need*	Preparation for the intervention		49	40.8
	Psychological support		40	33.3
	Health check		36	30.0
	Meeting the needs of the individual		36	30.0
	Financial support		26	21.7

* More than one answer is given. SD, standard deviation.

Table 2. Dialysis Symptoms Index and Mean Scores

Symptoms	Yes		Mean ± SD	Too much	
	n	%		n	%
Constipation	77	64.2	1.64 ± 0.80	3	2.5
Nausea	63	52.5	1.73 ± 0.76	2	1.7
Vomiting	45	37.5	1.62 ± 0.61	-	-
Diarrhea	39	32.5	1.51 ± 0.55	-	-
Decreased appetite	64	53.3	2.03 ± 1.03	6	5.0
Muscle cramps	62	51.7	1.74 ± 0.80	2	1.7
Swelling in the legs	46	38.3	1.60 ± 0.80	2	1.7
Shortness of breath	37	30.8	1.64 ± 0.82	2	1.7
Dizziness	44	36.7	1.77 ± 0.77	2	1.7
Difficulty keeping legs still	40	33.3	1.78 ± 0.93	3	2.5
Numbness in the feet	51	42.5	1.47 ± 0.61	-	-
Fatigue	70	58.3	2.07 ± 1.06	10	8.3
Coughing	51	42.5	1.68 ± 0.88	3	2.5
Dryness of the mouth	59	49.2	2.03 ± 1.03	7	5.8
Bone/joint pain	56	46.7	1.76 ± 1.02	5	4.2
Chest pain	19	15.8	1.73 ± 0.80	1	0.8
Headache	53	44.2	1.69 ± 0.82	3	2.5
Muscle pain	49	40.8	1.83 ± 0.96	4	3.3
Difficulty in concentrating	51	42.5	1.66 ± 0.84	2	1.7
Dryness of the skin	66	55.0	2.16 ± 1.14	11	9.2
Itching	68	56.7	2.17 ± 1.06	10	8.3
Feeling worried	63	52.5	1.68 ± 0.83	2	1.7
Feeling nervous	75	62.5	1.84 ± 0.86	3	2.5
Feeling sad	71	59.2	1.77 ± 0.94	6	5.0
Difficulty in maintaining sleep	72	60.0	1.95 ± 0.98	6	5.0
Feeling uncomfortable	60	50.0	1.81 ± 0.92	4	3.3
Difficulty falling asleep	73	60.8	2.05 ± 0.97	7	5.8
Feeling anxious	53	44.2	1.81 ± 1.06	6	5.0
Decreased interest in sexual intercourse	39	32.5	1.97 ± 1.02	4	3.3
Difficulty in getting sexual satisfaction	29	24.2	1.70 ± 0.98	2	1.7

SD, standard deviation.

between the never smoked group and the smoking group with regard to the use of medicine, self-monitoring, and total score of the Self-care Agency scale. On the other hand, there was no significant difference among the 3 groups in terms of other parameters ($P > .05$). DSI was lower in patients without support compared to those getting support ($P = .013$), whereas the use of medicine and total score of the Self-care Agency scale was higher in patients without support compared to those getting support ($P = .003$ and $.046$, respectively). On the other hand,

there was no significant difference between patients without support and those getting support in terms of other parameters ($P > .05$) (Table 4).

According to the correlation analysis, a statistically significant negative correlation was found between the DSI total score and the self-care agency total score ($r = -0.288$, $P < .01$). As the total score of the Self-care Agency scale decreases, the DSI total score average increases. There was a significant

Table 3. Relationship between Age and Duration of Peritoneal Dialysis (Years) with DSI and The Chronic Self-care Agency and Sub-dimension Scores

	Age	Duration of Peritoneal Dialysis (Years)
Dialysis Symptom Index	$r = 0.129$ $P = .161$	$r = 0.044$ $P = .634$
Total Score of the Self-care Agency Scale	$r = -0.145$ $P = .115$	$r = 0.157$ $P = .086$
Use of medicine	$r = -0.016$ $P = .670$	$r = 0.108$ $P = .240$
Diet	$r = -0.005$ $P = .957$	$r = 0.122$ $P = .185$
Self-monitoring	$r = -0.238$ $P = .009^*$	$r = 0.256$ $P = .005^*$
Hygienic care	$r = -0.185$ $P = .043^*$	$r = 0.151$ $P = .100$
Mental state	$r = 0.016$ $P = .861$	$r = -0.080$ $P = .385$

* $P < .05$.

negative correlation between DSI total score and sub-dimensions of medicine use ($r = -0.277$, $P < .01$), diet ($r = -0.196$, $P < .05$), self-monitoring ($r = -0.206$, $P < .05$), and hygiene ($r = -0.349$) ($P < .05$). When the mean scores for medicine use, diet, self-monitoring, and hygiene decrease, the mean DSI score increases.

DISCUSSION

End-stage renal failure is becoming more common and creates a significant burden on the health system. Approximately 7.24% of patients choose PD.¹ The possible factors for selecting the RRT include the self-care competencies of the individuals.

In this study, the most common symptoms in patients on PD were determined as constipation, feeling nervous, difficulty falling asleep and maintaining it, feeling sad, fatigue, itching, dryness of the skin, decreased appetite, feeling anxiety, nausea, and muscle cramps. Wang et al.¹⁰ stated that 95% of patients on PD experienced dryness of skin, itching, difficulty falling asleep, and fatigue. In Özdemiř's study,¹¹ the most common symptoms were listed as feeling tired or decreased energy, bone or joint pain, and decreased appetite. Unlike other study results, constipation ranked first in this study. It is thought that the reason for the constipation symptom in patients on PD may be associated with insufficient fluid intake. Similar to other study results, this symptom was followed by fatigue and sleep problems. Fatigue and sleep problems may be triggered by dialysis sessions that continue all night. Another study has determined fatigue as the most common symptom.¹² It is pointed out in the literature that fatigue in patients with chronic renal failure is caused by the presence of anxiety, depression, and comorbid illness.¹³

The highest symptom score in this study was dryness of skin and itching. General well-being in patients on dialysis is a major indicator of dialysis adequacy, and itching is one of these indicators.¹⁴ The high itching level in this study may be related to dialysis adequacy. On the other hand, constant itching day and night causes mental and physical fatigue and insomnia in the patient.¹⁵

Despite not being statistically significant, the DSI total mean score of patients who were high school or higher graduates, single, and had low income was found to be higher. The Dialysis Symptom Index mean score was found to be high in males, singles, and those with high education levels and low-income levels. This study supports the results of the study by Hintistan.¹⁶ Single patients and those with low-education levels were found to have experienced more symptoms. This may be because single and low-education level patients are inadequate to take care of the disease process.

Literature suggests that family support and marital satisfaction are important in the quality of life in the treatment process of patients on dialysis.¹⁷ In this study, as a cultural reflection of the Turkish society,^{18,19} patients mostly received support from their spouses and children. Patients receiving support had a higher DSI total score, and there was a significant difference between the groups. The high symptom scores experienced by patients may have increased their need for support, and patients were thought to be unable to cope with these symptoms on their own.

In various studies, self-care agency scores of non-smokers were higher.^{20,21} Similar to the literature, in this study, non-smoker patients had higher self-care agency total scores, the use of medicine, and self-monitoring sub-dimension mean scores, and a significant difference was determined between them.

In our study, there was a negative relationship between age and self-monitoring and hygiene sub-dimension mean scores. It was seen that with increasing age, self-care agency decreased in patients in terms of self-monitoring and the hygiene dimension. Another study emphasized that the risk of infection in PD increases with increasing age.²² For elderly patients on dialysis, nurse care is essential to receive better care and to take care of themselves. Nurses should follow this patient group more and provide more care and training. There was a significant difference between marital status and self-monitoring subscale mean scores, and self-monitoring subscale mean score in single patients was found to be high. In the study by Alemdar,²³ self-care agency of single patients was higher. Relevant studies report different results on this topic. As for our study, single patients were determined to engage more in self-care management.

The relationship between the duration of PD administration and the self-monitoring sub-dimension mean score was found to be positively significant in this study. As PD administration time increases, the self-monitoring sub-dimension mean score also

Table 4. Comparison of Socio-demographic Characteristics and Clinical Features with DSI and the Chronic Self-care Agency and Sub-dimension Scores

Characteristics	DSI	Use of Medicine	Diet	Self-monitoring	Hygienic Care	Mental State	Total Score of the Self-care Agency Scale
Marital status							
Married	19.5 (0-65)	10.0 (1-12)	6.0 (2-9)	4.0 (0-8)	6.0 (1-8)	3.0 (0-6)	29.0 (13-39)
Single	21.5 (0-62)	8.5 (3-12)	7.0 (3-10)	5.0 (1-7)	6.0 (1-8)	3.0 (0-5)	29.0 (16-36)
	Z = -0.704 P = .481	Z = -0.930 P = .353	Z = -1.419 P = .156	Z = -2.630 P = .009*	Z = -0.181 P = .856	Z = -0.527 P = .598	Z = -0.217 P = .828
Educational Level							
Literate/Illiterate	26.45 ±	8.81 ± 3.26	6.09 ± 1.66	4.09 ± 1.94	5.48 ± 1.71	2.63 ± 1.65	26.93 ± 5.84
Elementary school	20.56	8.42 ± 3.19	6.07 ± 1.64	3.80 ± 1.70	5.82 ± 1.71	3.08 ± 1.25	27.05 ± 6.93
High school and over	23.89 ±	9.00 ± 2.46	6.86 ± 1.45	4.50 ± 1.27	6.33 ± 1.74	3.30 ± 2.08	29.36 ± 4.76
	11.66 27.33 ± 18.17 F = 0.528 P = .591	F = 0.405 P = .668	F = 2.715 P = .070	F = 1.676 P = .192	F = 1.927 P = .150	KW = 2.965 P = .085	F = 1.646 P = .197
Cigarette smoking							
Yes	23.0 (3-63)	10.0 (3-12)	6.0 (2-9)	4.0 (1-7)	7.0 (3-8)	3.0 (1-5)	29.0 (14-39)
No	21.0 (0-66)	10.0 (1-12)	7.0 (2-10)	4.0 (0-8)	6.0 (1-8)	3.0 (0-6)	30.0 (13-39)
Ex-smoker	30.5 (5-78)	7.5 (2-12)	6.0 (3-9)	3.0 (1-6)	5.5 (1-8)	3.0 (0-6)	24.5 (14-35)
	KW = 5.989 P = .050	KW = 9.887 P = .007*	KW = 2.961 P = .227	KW = 7.905 P = .019*	KW = 3.634 P = .162	KW = 0.292 P = .864	KW = 10.135 P = .006*
Patients' state of getting support							
Yes	28.75 ±	8.0 (2-12)	6.0 (2-9)	4.0 (0-8)	6.0 (1-8)	3.0 (0-6)	28.0 (14-39)
No	15.97	11.0 (1-12)	6.0 (2-10)	4.0 (1-8)	6.0 (3-8)	3.0 (0-6)	30.0 (13.39)
	21.42 ± 15.55 t = 2.531 P = .013*	Z = -2.989 P = .003*	Z = -0.215 P = .830	Z = -1.325 P = .185	Z = -0.853 P = .394	Z = -0.119 P = .905	Z = -1.996 P = .046*

Data are presented as mean ± standard deviation or median (minimum-maximum). Z, Mann-Whitney U-test; F, one-way ANOVA test; KW, Kruskal-Wallis; t, independent t test; DSI, Dialysis Symptom Index. P < .05.

increases. Those who did not receive support during PD had a high self-care agency total score and the use of medicine sub-dimension total mean score, and a significant difference was found between the groups. In Ören's study,⁷ the highest mean score in patients on PD was reported as the use of medicine sub-dimension. In addition, Al Wakeel et al.²⁴ noted that complications for PD were less common in patients who performed PD on their own. The high self-care agency in patients performing their dialysis practice can be related to the fact that they try to cope with the problems they encounter and that they undertake their care more.

There was a negative correlation between the use of medicine, diet, self-monitoring, and hygiene subscale mean scores and Dialysis Symptom Index total mean scores; however, as DSI total mean score increased, self-care agency subscale mean scores decreased. It is stated that the training given by nurses to

patients on dialysis enhances the willpower of patients to cope with the complications related to the disease, inadequacy, and other problems that may develop.²⁵

While there was a negative correlation between self-care agency total mean score and DSI total score for Chronic Dialysis Patients, the DSI total mean score increased as the total score of the Self-Care Agency Scale for Chronic Dialysis Patients decreased. Patients who undergo dialysis treatment experience many symptoms throughout the treatment process, and self-care behaviors should be increased in disease management to overcome these symptoms.²⁶ Studies have reported that increased symptoms in patients on dialysis decrease the quality of life.^{27,28} It was emphasized in Lin's study²⁹ that self-care management in chronic kidney diseases is important in the treatment process. In Weng et al.'s³⁰ study with kidney transplant patients, a positive correlation was observed between self-care

Table 5. Relationship Between Dialysis Symptom Index and Total Score of the Self-care Agency Scale and Sub-dimensions

	Dialysis Symptom Index
Total Score of the Self-care Agency Scale	$r = -0.288$ $P = .001$
Use of Medicine	$r = -0.277$ $P = .002$
Diet	$r = -0.196$ $P = .032$
Self-monitoring	$r = -0.206$ $P = .024$
Hygienic Care	$r = -0.349$ $P = .001$
Mental State	$r = 0.073$ $P = .428$

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and the resolution of disease-related problems. Improving the self-care agency in patients on PD shows that their quality of life increased. It has been observed that patients with high self-care agency can cope with disease-related problems more. The results of this study show that increasing the self-care agency of patients will decrease the frequency of symptoms.

Limitations

Limitations in the methodology of this study may affect the results obtained from the study. The patients included in the study were interviewed once and asked to remember the symptoms they experienced within a week. Another limitation of the study may be the tendency of patients to show their health-related behavior better. The results of the study cannot be generalized to other patients, since the study was conducted in a single city and may reflect the potential characteristics of patients living in this region.

CONCLUSION

This study revealed that patients on PD frequently experienced symptoms of constipation, feeling nervous, difficulty falling asleep, difficulty in maintaining sleep, feeling sad, fatigue, itching, dryness of skin, decreased appetite, anxiety, nausea, muscle cramps, and feeling uncomfortable. It was seen that smoking affected self-care agency negatively and those who were not supported during dialysis treatment had higher self-care agency. Dialysis symptoms were found to be more common in patients receiving support during dialysis. It was also determined that there was a relationship between the duration of the disease and the duration of PD and self-care agency. The lack of factors such as the use of medicine, diet, personal follow-up, and hygiene that make up the self-care agency during treatment increases the frequency and severity of symptoms.

As a result, improving the level of self-care agency will lead to reduction in physical and psychological symptoms.

Health-related behaviors have gained importance in the control of symptoms in patients on dialysis.

Ethics Committee Approval: Ethics committee approval was received from the Ethics Committee of Trabzon Kanuni Training and Research Hospital (314/2015).

Informed Consent: Written informed consent was obtained from all participants who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – Y.A.; Design – N.N.; Supervision – N.N.; Resources – Y.A.; Materials – Y.A., N.N.; Data Collection and/or Processing – YA; Analysis and/or Interpretation – Y.A., N.N.; Literature Search – Y.A.; Writing Manuscript – Y.A., N.N.; Critical Review – N.N.

Acknowledgments: The authors would like to thank the peritoneal dialysis patients for their contribution to science during their tiring dialysis process.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

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