

Burnout Syndrome Among Hemodialysis and Peritoneal Dialysis Nurses

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Introduction. Burnout, a syndrome with 3 dimensions of emotional exhaustion, depersonalization, and reduction of personal accomplishment, is very common among hemodialysis nurses, while data are scarce regarding the prevalence of burnout syndrome (BS) among peritoneal dialysis (PD) nurses. This study aimed to assess and compare demographic and professional characteristics and burnout levels in hemodialysis and PD nurses, and to investigate factors that increase the level of burnout in dialysis nurses.

Materials and Methods. A total of 171 nurses from 44 dialysis centers in Turkey were included in a cross-sectional survey study. Data were collected using a questionnaire defining the social and demographic characteristics and working conditions of the nurses as well as the Maslach Burnout Inventory for assessment of burnout level.

Results. There was no significant difference in the level of burnout between the hemodialysis and PD nurses groups. Emotional exhaustion and depersonalization scores were higher among the shift workers, nurses who had problems in interactions with the other team members, and those who wanted to leave the unit, as well as the nurses who would not attend training programs. In addition, male sex, younger age, limited working experience, more than 50 hours of working per week, and working in dialysis not by choice were associated with higher depersonalization scores. Personal accomplishment score was lower among the younger nurses who had problems in their interactions with the doctors, who would not regularly attend training programs, and who felt being medically inadequate.

Conclusions. Improving working conditions and relations among colleagues, and also providing further dialysis education are necessary for minimizing burnout syndrome. Burnout reduction programs should mainly focus on younger professionals.

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INTRODUCTION

Burnout is a syndrome characterized by 3 main components of emotional exhaustion, lack of empathy with patients and colleagues, and diminished personal accomplishment that leads to decreased effectiveness at work.^{1,2} This syndrome

includes a constellation of diverse manifestations such as fatigue, insomnia, irritability, inability to concentrate, decreased morale, a loss of quality in performance of work, and an increased use of alcohol or drugs in order to cope at home or at work.³ Burnout syndrome (BS) has been identified in

many human service industries since its introduction in 1974 by Freudenberg for the first time.⁴ This phenomenon may be of special importance in healthcare providers, not only because of the nature of the work, but also because of its high frequency. Indeed, the prevalence of this condition among healthcare professionals has been generally reported to vary from 25% to 70%.⁵⁻⁷

Nursing is one of the most stressful jobs and is related to helping patients. Burnout syndrome can be due to degradation and deterioration of the relations between the nurse and the patient, other colleagues, family, and social environment.⁸ In addition, burnout is closely related to the absenteeism and abandonment of the nurse's work.⁹ Finally, nurse burnout may lead to poor patient care and increase the risk of medical errors.¹⁰ Amelioration of burnout symptoms may lead to better nurse and physician mental health and productivity ultimately leading to better care for the patients.^{2,11}

The level of occupational burnout varies among nurses working in different wards. An increasing number of data are currently available in dialysis healthcare workers and the majority of them focus on nurses.^{3,16-26} Dialysis nurses routinely face a long-term chronic illness, ie, end-stage kidney failure. This occurs in a growing elderly population with frequent never-ending demands and noncompliance and poor prognosis, who often require heavy physical efforts; even the patients carry a high risk of death in the unit.³ Hemodialysis and peritoneal dialysis (PD) nurses have to deal with complex dialysis techniques, sophisticated modern dialysis machines, strict implementation of infection control policies and procedures, increased work demands due to the growing number of patients with end-stage renal disease in need of dialysis treatment, and long-term interactions with patients and their families.^{15,27,28} Dialysis nurses are also forced to work both hemodialysis and PD units because of continuous shortage of professional dialysis nursing staff. All of which can be a major source of burnout. High levels of burnout in physicians and nurses are associated with poor patient satisfaction in dialysis units; therefore, identifying and preventing staff burnout may improve patient satisfaction and health care.²⁹

In the present study, we aimed to assess the demographic features, working conditions, and

burnout levels in dialysis nurses and to compare levels of burnout between hemodialysis and PD nurses. Another aim of the study was to investigate factors which increase the level of burnout in dialysis nurses.

MATERIALS AND METHODS

Study Design

This was an observational, multicentre, cross-sectional study designed to measure and compare burnout levels of hemodialysis and PD nurses in Turkey.

Study Population

Forty-four dialysis centers in Turkey participated in the study. Sixteen were university centers. Inclusion of the nurses of the 44 dialysis centers mentioned was planned both to avoid limiting the study to a particular group of subjects working under specific conditions and to increase the number of subjects, since the number of dialysis nurses in any single center was considered too low to allow for sound comparisons.

The nurses who were full-time employees in the dialysis units at the time of the study were included. We excluded professionals who had not worked in dialysis for at least 3 months before receiving the questionnaire. With regard to unit where the nurses had been working, the nurses were divided into 3 groups: hemodialysis nurses who work in hemodialysis unit, PD nurses who work in PD unit, hemodialysis and PD nurses who work in both hemodialysis and PD units.

Collected Data and Tools

After determination of the study candidates, they were approached by a letter stating the objectives and methods of the study, and asking for their contribution. The data were collected by confidential questionnaires handed out or e-mailed to respondents. Name was not asked in the questionnaires. Each nurse was asked to complete the questionnaire focusing on social and demographic characteristics (sex, age, educational level, marital status, having children, hobbies, and health problems), working conditions (job description, duration of employment, hours worked per week, work in shifts, reason for working at dialysis unit, quality of relationship with coworkers, attending training courses, and

social programs such as concerts, theatre, and travel). The questionnaires were given back to the project coordinator after 7 days.

Burnout was assessed with the Maslach Burnout Inventory (MBI). This is a tool with a total of 22 items that evaluates BS in 3 categories of emotional exhaustion (9 items), depersonalization (5 items), and personal accomplishment (8 items).¹ Items in the scale were adapted to the Turkish language by Ergin in 1992 and are evaluated using a 5-point Likert scale, with zero indicating “never” and 4 indicating “every time”.³⁰

Statistical Analysis

The collected data were analyzed using the NCSS software (Number Cruncher Statistical System, 2007 version, Utah, USA) and the PASS software (Power Analysis and Sample Size, 2008 version, Utah, USA). Numeric variables were summarized mean \pm standard deviation and categorical variables as proportions. When the numeric variables had a normal distribution, the Student *t* test was used for comparisons; otherwise, the Mann-Whitney *U* test was used. For comparison of 3 or more groups that showed normal distribution, the 1-way analysis of variance was used, and for detecting the group that resulted in significance, the Tukey

HSD and Tamhane tests were used. For comparing 3 or more groups that did not show normal distribution, the Kruskal-Wallis test and Mann-Whitney *U* test were used, as needed. The Pearson chi-squared test and Fisher-Freeman-Halton test were used for comparing the categorical data. The Spearman correlation test was used for assessing the relationships between various parameters. Statistical significance was evaluated at *P* value levels less than .05.

RESULTS

Population Characteristics

One hundred and seventy-one nurses filled out the questionnaires. The overall response rate was 85.5% (171 of 200 nurses). Of the enrolled nurses, 89 were hemodialysis nurses, 32 were PD nurses, and 50 were working at both hemodialysis and PD units. Demographic features of the nurses in all groups are shown in Table 1. With regard to sex, women formed the highest percentage in all groups. Age, education level, marital status, and the number of children were not different between the groups.

Working conditions of the nurses working at hemodialysis, PD, and both units are shown in Table 2. The period of employment was significantly

Table 1. Characteristics of Participating Nurses*

Characteristic	All Nurses (n = 171)	Hemodialysis Nurses (n = 89)	Peritoneal Dialysis Nurses (n = 32)	Hemodialysis and Peritoneal Dialysis Nurses (n=50)	<i>P</i>
Sex					
Female	158 (93.5)	83 (95.4)	32 (100.0)	43 (86.0)	.03
Male	11 (6.5)	4 (4.6)	0 (0.0)	7 (14.0)	
Age, y					
20 to 30	43 (25.3)	25 (28.5)	9 (28.1)	9 (18.0)	.45
30 to 40	95 (55.9)	48 (54.5)	19 (59.4)	28 (56.0)	
> 40	32 (18.8)	15 (17.0)	4 (12.5)	13 (26.0)	
Education level					
High school	17 (9.9)	12 (13.5)	2 (6.3)	3 (6.0)	.58
Associated degree	53 (31.0)	28 (31.5)	11 (34.4)	14 (28.0)	
\geq Undergraduate education	101 (59.1)	49 (55.0)	19 (59.4)	33 (66.0)	
Marital status					
Married	119 (70.0)	65 (73.9)	19 (59.4)	35 (70.0)	.31
Single	51 (30.0)	23 (26.1)	13 (40.6)	15 (30.0)	
Number of children					
0	27 (21.8)	16 (24.2)	6 (30.0)	5 (13.1)	.60
1	46 (37.1)	24 (36.4)	7 (35.0)	15 (39.5)	
\geq 2	51 (41.1)	26 (39.4)	7 (35.0)	18 (47.4)	
Having a hobby	131 (79.4)	67 (79.8)	27 (84.4)	37 (75.5)	.62
Health problems (n=167)	56 (33.5)	30 (34.5)	9 (29.0)	17 (34.7)	.84

*Values are frequency (percentage).

Table 2. Characteristics With Regards to Job Features*

Characteristic	All Nurses (n = 171)	Hemodialysis Nurses (n = 89)	Peritoneal Dialysis Nurses (n = 32)	Hemodialysis and Peritoneal Dialysis Nurses (n=50)	P
Employment years					
< 4	19 (11.2)	11 (12.4)	5 (16.1)	3 (6.0)	
4 to 7	22 (12.9)	14 (15.7)	4 (12.9)	4 (8.0)	
8 to 10	14 (8.3)	9 (10.1)	5 (16.1)	0	
> 10	115 (67.6)	55 (61.8)	17 (54.9)	43 (86.0)	.01
Hours of work per week					
40	59 (35.3)	27 (31.8)	9 (28.1)	23 (46.0)	
45	78 (46.7)	39 (45.9)	19 (59.4)	20 (40.0)	
50	18 (10.8)	8 (9.4)	4 (12.5)	6 (12.0)	
> 50	12 (7.2)	11 (12.9)	0 (0.0)	1 (2.0)	.06
Work in shifts	78 (45.6)	49 (55.1)	11 (34.4)	18 (36.0)	.04
Reason for selecting dialysis unit					
Own preference	75 (44.1)	46 (51.7)	14 (43.8)	15 (30.6)	
Incidental	42 (24.7)	24 (27.0)	4 (12.5)	14 (28.6)	
Pressure of family	6 (3.6)	3 (3.3)	1 (3.1)	2 (4.1)	
Pressure of administration	47 (27.6)	16 (18.0)	13 (40.6)	18 (36.7)	.04
Satisfaction from interaction with other nurses					
Yes	121 (72.0)	64 (71.9)	25 (78.1)	32 (68.1)	
Partly	39 (23.2)	22 (24.7)	5 (15.6)	12 (25.5)	
No	8 (4.8)	3 (3.4)	2 (6.3)	3 (6.4)	.68
Satisfaction from interaction with doctors					
Yes	103 (60.6)	48 (54.6)	21 (65.6)	34 (68.0)	
Partly	56 (32.9)	36 (40.9)	7 (21.9)	13 (26.0)	
No	11 (6.5)	4 (4.5)	4 (12.5)	3 (6.0)	.13
Satisfaction from interaction with administration					
Yes	96 (56.5)	53 (60.2)	19 (59.4)	24 (48.0)	
Partly	52 (30.6)	25 (28.4)	10 (31.2)	17 (34.0)	
No	22 (12.9)	10 (11.4)	3 (9.4)	9 (18.0)	.61
Willingness to change job	24 (14.0)	11 (12.4)	5 (15.6)	8 (16.0)	.81
Level of medical knowledge					
Adequate	88 (51.5)	49 (55.1)	11 (34.4)	28 (56.0)	
Inadequate	3 (1.7)	0 (0.0)	2 (6.2)	1 (2.0)	
Partly	80 (46.8)	40 (44.9)	19 (59.4)	21 (42.0)	.049
Attending training programs					
Yes	63 (36.8)	25 (28.1)	18 (56.3)	20 (40.0)	
Sometimes	74 (43.3)	37 (41.6)	12 (37.5)	25 (50.0)	
No	34 (19.9)	27 (30.3)	2 (6.2)	5 (10.0)	.002
Attending social programs					
Rarely	69 (40.6)	39 (43.8)	11 (34.4)	19 (39.6)	
Inconsiderable	59 (34.7)	31 (34.8)	10 (31.3)	18 (37.5)	
Adequately	41 (24.1)	19 (21.3)	11 (34.4)	11 (22.9)	
Often	1 (0.6)	0	0	1 (2.0)	.65

*Values are frequency (percentage).

different ($P = .01$), with a larger group in the hemodialysis and PD group who had been working more than 10 years. Although weekly working hours were not different between the three groups ($P = .06$), nurses working at hemodialysis units were more likely to work than 50 hours per week

than those in the other two groups. Moreover, shift working was the most frequent among hemodialysis nurses ($P = .04$).

Most of the time, hemodialysis nurses preferred to become a dialysis nurse by their own decision; the influence of administration on this preference

was lower as compared to the other groups ($P = .04$). Although the rate of attending the training programs was the lowest in the hemodialysis nurses, this group did not perceived themselves medically inadequate.

Level of Burnout

The level of burnout in the study population is shown in Table 3. The median emotional exhaustion score was 14 for hemodialysis nurses, 11 for PD nurses, and 12.5 for nurses working at both hemodialysis PD units ($P = .28$); the median depersonalization scores were 4, 3, and 4, respectively ($P = .19$), the median personal accomplishment scores were 20, 22, and 21, respectively ($P = .14$). According to the level of

burnout, there was no difference between the nurses groups.

Factors Associated With Burnout Syndrome

Emotional exhaustion, depersonalization, and the personal accomplishment scores are shown in Tables 4 and 5, with regard to the demographic features and working conditions of the nurses. Emotional exhaustion and depersonalization scores were higher among shift workers, nurses who had problems in interactions with other team members, and those who would like working in another unit, as well as nurses who had not attended training programs. In addition, being male, being younger (age between 20 and 30 years), short work experience (≤ 3 years), working more than 50 hours per

Table 3. Levels of Burnout*

Burnout Domain	All Nurses (n = 171)	Hemodialysis Nurses (n = 89)	Peritoneal Dialysis Nurses (n = 32)	Hemodialysis and Peritoneal Dialysis Nurses (n=50)	P
Emotional exhaustion	14.01 ± 7.28 (14.0)	14.78 ± 7.48 (14.0)	12.66 ± 5.94 (11.0)	13.50 ± 7.64 (12.5)	.28
Depersonalization	4.43 ± 3.37 (4.0)	4.73 ± 3.27 (4.0)	3.56 ± 3.08 (3.0)	4.44 ± 3.68 (4.0)	.19
Personal Accomplishment	20.78 ± 4.13 (21.0)	20.18 ± 4.34 (20.0)	21.50 ± 3.85 (22.0)	21.40 ± 3.83 (21.0)	.14

*Values are mean ± standard deviation (median).

Table 4. Emotional Exhaustion, Depersonalization, and Personal Accomplishment Scores by Characteristics of Nurses*

Characteristic	Emotional exhaustion	P	Depersonalization	P	Personal Accomplishment	P
Sex						
Female	13.69 ± 6.94 (13.5)		4.21 ± 3.22 (4.0)		20.87 ± 4.02 (21.0)	
Male	18.82 ± 10.43 (21.0)	.13	7.82 ± 4.02 (7.0)	.004	19.27 ± 5.27 (20.0)	.36
Age, y						
20 to 30	14.07 ± 7.03 (15.0)		5.81 ± 3.87 (5.0)		19.49 ± 4.34 (19.0)	
30 to 40	13.86 ± 7.73 (13.0)		3.91 ± 3.21 (4.0)		21.11 ± 4.10 (21.0)	
> 40	14.19 ± 6.47 (14.0)	.97	4.09 ± 2.69 (4.0)	.02	21.69 ± 3.65 (21.5)	.04
Education level						
High school	13.65 ± 6.90 (13.0)		5.41 ± 3.24 (5.0)		19.29 ± 4.96 (19.0)	
Associated degree	14.32 ± 7.48 (14.0)		4.13 ± 3.36 (3.0)		20.30 ± 4.11 (21.0)	
≥ Undergraduate education	13.90 ± 7.30 (14.0)	.92	4.42 ± 3.40 (4.0)	.36	21.29 ± 3.95 (21.0)	.11
Marital status						
Married	13.58 ± 7.32 (13.0)		4.08 ± 3.22 (4.0)		20.92 ± 4.15 (21.0)	
Single	14.90 ± 7.20 (14.0)	.28	5.24 ± 3.63 (5.0)	.06	20.55 ± 4.14 (21.0)	.60
Number of children						
0	13.63 ± 6.94 (14.0)		4.26 ± 3.40 (4.0)		20.48 ± 3.98 (21.0)	
1	13.07 ± 7.55 (13.0)		4.13 ± 3.24 (4.0)		20.22 ± 4.33 (21.0)	
≥ 2	13.20 ± 7.01 (12.0)	.95	3.59 ± 3.04 (3.0)	.62	22.12 ± 3.94 (22.0)	.06
Having a hobby						
Yes	14.04 ± 7.36 (13.0)		4.43 ± 3.33 (4.0)		20.93 ± 4.11 (21.0)	
No	13.47 ± 6.97 (13.5)	.69	4.38 ± 3.73 (4.0)	.83	20.32 ± 4.50 (21.0)	.45
Health problems						
Yes	15.64 ± 6.93 (15.5)		5.02 ± 3.29 (5.0)		21.05 ± 3.89 (21.0)	
No	13.20 ± 7.41 (12.0)	.04	4.11 ± 3.44 (4.0)	.06	20.60 ± 4.27 (21.0)	.51

*Values are mean ± standard deviation (median).

Table 5. Emotional Exhaustion, Depersonalization, and Personal Accomplishment Scores by Working Conditions of Nurses*

Characteristic	Emotional exhaustion	P	Depersonalization	P	Personal Accomplishment	P
Employment years						
< 4	15.11 ± 7.29 (17.0)		6.63 ± 4.08 (5.0)		19.37 ± 5.25 (19.0)	
4 to 7	13.45 ± 7.01 (12.5)		5.27 ± 3.52 (5.0)		19.32 ± 4.75 (18.5)	
8 to 10	12.00 ± 5.04 (11.5)		4.86 ± 3.46 (5.5)		20.79 ± 4.15 (22.0)	
> 10	14.20 ± 7.60 (14.0)	.64	3.83 ± 3.05 (4.0)	.02	21.27 ± 3.73 (21.0)	.09
Hours of work per week						
40	12.61 ± 6.67 (11.0)		4.03 ± 3.63 (4.0)		21.34 ± 4.33 (22.0)	
45	13.71 ± 7.52 (13.0)		3.79 ± 2.96 (4.0)		20.85 ± 4.03 (21.0)	
50	16.89 ± 7.03 (17.5)		7.22 ± 4.12 (7.5)		20.72 ± 4.24 (21.0)	
> 50	15.58 ± 7.06 (16.5)	.13	5.67 ± 2.81 (5.5)	.003	18.83 ± 3.10 (19.5)	.29
Work in shifts						
Yes	15.23 ± 7.52 (14.5)		5.12 ± 3.50 (5.0)		20.44 ± 4.15 (21.0)	
No	12.98 ± 6.95 (12.0)	.04	3.85 ± 3.17 (3.0)	.01	21.08 ± 4.12 (21.0)	.32
Reason for selecting dialysis unit						
Own preference	12.83 ± 7.07 (12.0)		3.65 ± 2.89 (3.0)		21.33 ± 4.25 (21.0)	
Incidental	15.86 ± 7.90 (16.0)		5.26 ± 3.49 (5.0)		20.10 ± 3.69 (20.0)	
Pressure of family	11.17 ± 7.63 (11.5)		2.00 ± 2.90 (0.5)		21.50 ± 4.32 (21.0)	
Pressure of administration	14.30 ± 6.55 (14.0)	.12	5.11 ± 3.65 (4.0)	.01	20.51 ± 4.32 (21.0)	.45
Satisfaction from interaction with other nurses						
Yes	13.15 ± 7.17 (12.0)		3.96 ± 3.04 (4.0)		20.92 ± 4.22 (21.0)	
No	21.38 ± 7.48 (21.0)		8.75 ± 3.92 (10.5)		18.50 ± 2.56 (19.0)	
Partly	15.79 ± 6.46 (16.0)	.002	5.13 ± 3.55 (5.0)	.003	20.74 ± 4.13 (21.0)	.16
Satisfaction from interaction with doctors						
Yes	11.86 ± 6.67 (11.0)		3.35 ± 2.82 (3.0)		21.50 ± 4.02 (21.0)	
No	22.27 ± 6.60 (22.0)		9.64 ± 2.98 (11.0)		18.91 ± 2.43 (19.0)	
Partly	16.25 ± 6.76 (17.0)	.001	5.39 ± 3.19 (5.0)	.001	20.00 ± 4.25 (20.5)	.02
Satisfaction from the interaction with administration						
Yes	12.35 ± 7.23 (11.0)		3.54 ± 2.94 (3.0)		21.22 ± 4.28 (21.0)	
No	17.95 ± 8.04 (18.5)		6.59 ± 4.11 (6.0)		19.73 ± 3.48 (19.0)	
Partly	15.31 ± 6.23 (15.0)	.001	5.23 ± 3.20 (5.0)	.001	20.52 ± 4.06 (21.0)	.26
Willingness to change job						
Yes	19.04 ± 8.34 (17.0)		6.46 ± 3.16 (6.0)		21.00 ± 3.44 (21.5)	
No	13.18 ± 6.77 (13.0)	.001	4.10 ± 3.30 (4.0)	.001	20.75 ± 4.25 (21.0)	.78
Level of medical knowledge						
Adequate	13.47 ± 7.82 (13.0)		3.94 ± 3.20 (4.0)		21.50 ± 4.21 (22.0)	
Inadequate	13.00 ± 8.88 (10.0)		7.33 ± 3.51 (7.0)		19.00 ± 5.20 (16.0)	
Partly	14.64 ± 6.63 (15.0)	.30	4.85 ± 3.48 (4.0)	.95	20.06 ± 3.92 (20.5)	.02
Attending training programs						
Yes	11.33 ± 5.92 (11.0)		3.25 ± 2.90 (3.0)		21.73 ± 3.94 (22.0)	
No	17.15 ± 8.65 (17.5)		5.76 ± 4.10 (5.0)		20.82 ± 3.71 (21.0)	
Sometimes	14.84 ± 6.95 (15.0)	.001	4.81 ± 3.09 (5.0)	.002	19.96 ± 4.35 (20.0)	.04
Attending social programs						
Rarely	14.72 ± 7.92 (14.0)		4.32 ± 3.37 (4.0)		20.17 ± 4.24 (21.0)	
Inconsiderable	14.93 ± 6.62 (15.0)		4.85 ± 3.41 (4.0)		21.14 ± 4.44 (22.0)	
Adequately	11.78 ± 6.77 (10.0)		4.10 ± 3.35 (4.0)		21.34 ± 3.50 (21.0)	
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*Values are mean ± standard deviation (median).

week, and becoming dialysis nurse not by choice were characterized by a higher depersonalization score. Personal accomplishment score was lower among younger nurses (between 20 and 30 years),

those who suffered from problems in interactions with the doctors, those who did not sufficiently attend training programs, and those who felt being medically inadequate.

A positive correlation was found between the emotional exhaustion score and the depersonalization score ($r = 0.655$; $P = .001$). Also the emotional exhaustion score and depersonalization score were negatively correlated with personal accomplishment score ($r = -0.238$, $P = .002$ and $r = -0.360$, $P = .001$, respectively).

DISCUSSION

This study investigated the burnout level in hemodialysis and PD nurses and studied the factors which increased the level of burnout in dialysis nurses. Employees in the dialysis sector are subject to moderate levels of stress and burnout.²⁵ Different studies have been conducted on BS among hemodialysis nurses,^{7,8,16-26,29,31,32} but fewer have been conducted among PD nurses.^{14,27} Dialysis nurses are exposed to high levels of stress.¹⁹ Working in hemodialysis units and PD units provokes increased stress in nursing personnel, even though the implicated stress factors differ between these units.²⁷ Burnout experienced by PD providers is comparable to that experienced by other providers in the medical field, and also, specific variables such as being single, full time employment, and additional hemodialysis responsibilities are identified as factors that may be associated with high degree of burnout in PD nurses.¹⁴ While many of the responsibilities of the PD nurses are the same as of hemodialysis nurses, there are some differences. Peritoneal dialysis nurses have excellent teaching skills. In this study, the results showed burnout levels were similar between hemodialysis and PD nurses. Burnout level may be found similar in hemodialysis and PD nurses because of hemodialysis and PD nurses serve the patients with similar problems.

Previous studies have found significant reasons for burnout experienced by nurses working in dialysis units.^{12,13,17,18,21-23,26,31} The results indicated that workload was the major contributing factor to both overall stress and burnout,¹³ and also burnout was related to sex, religion, religious observance, number of children, major working place, administrative position as nurse, domain of nephrology, size of unit, and seniority.²⁶

Sex and marital status predict at least one of the dimensions of the BS,³³ and being female increases the risk of burnout.^{34,35} The prevalence and propensity for BS is also higher among single

and childless nurses.^{14,35} In the present analysis, the median scores of depersonalization were significantly higher in the male nurses and there was not any difference at burnout level with regard to marital status and the number of children.

Burnout level is higher in younger individuals.^{14,36} Increasing age was associated with lower levels of emotional exhaustion and depersonalisation.³⁷ Hemodialysis nursing is characterised by frequent and intense contact with patients in a complex and intense environment. Nurses who were older and had worked in hemodialysis the longest had higher satisfaction levels and experienced less stress and lower levels of burnout than younger nurses.²² We have noted that depersonalisation level is higher, and personal accomplishment is lower in younger nurses. Therefore, we suggest that the target group of burnout reduction programs should focus on younger professionals.

The relationship between education level and burnout is controversial; although higher education level has been reported to increase professional burnout by 3.17-fold,³⁸ Demir and colleagues reported that higher education level decreased burnout.³⁹ Also in the present study, there was no association between BS and educational level. The nature of the present study does not give opportunity to look for a cause-and-effect relationship.

Although hobbies have been suggested to be useful for prevention of burnout,^{26,40} we observed no significant differences in the propensity of burnout between the nurses who performed and did not perform such activities.

Work experience may decrease burnout.³⁹ Queiros and coworkers showed that years of experience at work and working in more than 1 institution seemed to be predictors of burnout among nurses.⁴¹ This finding may be explained by the fact that nurses with more experience on the job may experience higher confidence about their tasks and may have developed relationships at work, which are more pleasant for them.⁴¹ In accordance with this suggestion, Patrick and Lavery proposed that nurses who worked longer on the job were likely to have previously experienced most work scenarios; therefore, they understood and managed problems or potential ambiguous work situations with higher confidence and certainty.³⁷ In another study, one of the strongest associations between burnout and

midwives' characteristics was work experience less than 10 years.⁴² Young and inexperienced nurses face an initial shock when confronted with the realities of the job they have chosen; they often begin with great expectations and then go through a period of difficult adaptation because of lack of skill. This leads to feelings of incompetence and uncertainty in their work and early experience of burnout. It is possible that as their experience increases over time, there is a consequent decrease in such feelings and they may develop a degree of tolerance towards the discrepancy between expectation and reality; this may, in turn, explain the decrease in burnout found in older nurses with longer professional experience. It is also possible that job satisfaction increases with increasing age and experience and that this, too, may decrease burnout.⁴³ In our study, depersonalization score was found to be higher in nurses whose work experience was limited (3 years and less). Young and inexperienced nurses should be supported by being paired with experienced colleagues.

Workload and conflict with other employees are factors that increase the level of professional burnout.^{6,39} Working overtime was associated with emotional exhaustion.³⁷ Similar to other countries, the nursing shortage and heavy workload of nurses are common issues in Turkish hospitals. The impact of nursing shortage forces the nurses to work more than the ideal hours. In this study, therefore, depersonalization score was found to be higher in nurses who worked more than 50 hours per week. Other important findings of the present study were that nurses who had problems in relationships with the other team members (such as the nurses and the doctors) and were not satisfied with their work conditions and wanted to change the present job or position had higher levels of burnout. In addition the burnout level was found to be higher in the nurses who did not attend nursing educational program. Our findings suggest that to prevent burnout, it is necessary to improve working conditions, relationships with colleagues, and occupational training programs.

While dialysis nurses are vulnerable to BS because of the complex nature of patients' health problems, working in dialysis unit has become even more complicated by shift working schedules. Many health impairments associated with shift work exposure have been reported.⁴⁴⁻⁴⁶ Furthermore,

shifts, including working nights, and increases in the length of time worked during the day, have been shown to be predisposing factors for burnout, both in this study and the previous studies.³⁹⁻⁴³ The type of shift work had a significant relationship with burnout in the nurses. Critical care nurses with fixed shift schedules display more burnout compared to those working with rotating shift schedules.⁴⁷ In this study, the relationship between the burnout level and the type of shift work has not been searched.

The results of this study should be considered in the light of some limitations, such as the cross-sectional design and utilization of self-reported measures, which may increase the possibility of response bias. Stressful life events and work-family conflicts, which may affect the outcome of burnout, as found in other studies, were not examined in this study.

CONCLUSIONS

This study supports the interactionist approach to burnout. In other words, it is crucial to investigate the relationship between sociodemographic, working, and personality factors to understand burnout. These findings should be taken into account when designing burnout prevention programs for dialysis nurses working in hospitals. Since burnout level is higher among younger individuals, target group of burnout reduction programs should focus on young professionals. Young and inexperienced nurses should be supported by pairing them with experienced colleagues. To prevent burnout, it is necessary to improve working conditions and relationships with colleagues. Providing further dialysis education for nurses may be useful for decreasing burnout level as well.

CONFLICT OF INTEREST

None declared.

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