ORIGINAL RESEARCH ORİJİNAL ARAŞTIRMA

Effect on Nurses' Care Behaviors of Burnout at the COVID-19 Pandemic: Descriptive Cross-Sectional Study

COVID-19 Pandemisinde Tükenmişliğin Hemşirelerin Bakım Davranışları Üzerine Etkisi: Tanımlayıcı Kesitsel Araştırma

Şenay TAKMAK[a], Sümeyye ARSLAN[b], Fatma YURTSEVEN[c]

[a]Department of Nursing, Kütahya University of Health Sciences Faculty of Health Sciences, Kütahya, Türkiye
[b]Department of Nursing, Pamukkale University Faculty of Health Sciences, Denizli, Türkiye
[c]Clinic of Gastroenterology Surgery, Denizli State Hospital, Denizli, Türkiye

ABSTRACT Objective: This study was to determine the burnout levels and care behaviors of nurses during the coronavirus disease-2019 pandemic and to evaluate the effects of nurses' sociodemographic characteristics, pandemic process, and burnout on care behaviors. **Material and Methods:** The study was cross-sectional design and the sample consisted of 150 nurses working at a state hospital. Data were collected between April and May 2021 with Maslach Burnout Inventory and Caring Behaviors Inventory-24 scales. Independent samples t-test, Mann-Whitney U test, Kruskal-Wallis variance analysis, Pearson correlation test and multiple linear regression analysis were used in data analysis. **Results:** Approximately one in three nurses experienced high levels of emotional exhaustion (30%), whereas 34.7% of the nurses experienced moderate burnout in terms of personal achievement. Nurses had a high perception of care behaviors and the mean score was 5.05±0.57. Highest care behavior scores were obtained in the knowledge and skill sub-dimension (5.46±0.58) and the lowest scores were obtained in the positive connectedness sub-dimension (4.94±0.70). Emotional exhaustion, depersonalization, personal achievement, and working in the pandemic ward had a significant effect on care behaviors. Depersonalization negatively affected care behaviors, whereas personal achievement, emotional exhaustion and working in the pandemic ward increased care behaviors. **Conclusion:** In this study, unlike the literature, almost all of the nurses experience moderate and high levels of personal achievement burnout. Caring behavior was negatively affected by depersonalization. Nursing curriculum and health policies should prepare nurses for possible crises and psychosocial support for nurses should be increased.

Keywords: Burnout; caring behaviors; COVID-19; nurses; pandemic

ÖZET Amaç: Bu çalışma, koronavirüs hastalığı-2019 pandemisi sırasında hemşirelerin tükenmişlik düzeylerini, bakım davranışlarını belirlemek ve hemşirelerin sosyodemografik özellikleri, pandemi süreci ile tükenmişliğin bakım davranışları üzerindeki etkilerini değerlendirmek amacıyla yapılmıştır. **Gereç ve Yöntemler:** Çalışma kesitsel desende olup, örneklemini bir devlet hastanesinde çalışan 150 hemşire oluşturmuştur. Veriler Nisan-Mayıs 2021 tarihleri arasında Maslach Tükenmişlik Envanteri ve Bakım Davranışları Envanteri-24 ölçekleri ile toplanmıştır. Verilerin analizinde bağımsız örneklem t-testi, Mann-Whitney U testi, Kruskal-Wallis varyans analizi, Pearson korelasyon testi ve çoklu doğrusal regresyon analizi uygulanmıştır. **Bulgular:** Yaklaşık her üç hemşireden biri yüksek düzeyde duygusal tükenme yaşarken (%30), hemşirelerin %34,7'si kişisel başarı açısından orta düzeyde tükenmişlik yaşamaktadır. Hemşirelerin bakım davranışları algısı yüksek olup puan ortalaması 5,05±0,57'dir. En yüksek bakım davranışı puanları bilgi ve beceri alt boyutunda (5,46±0,58), en düşük puanlar ise olumlu bağlılık alt boyutunda (4,94±0,70) elde edilmiştir. Duygusal tükenme, duyarsızlaşma, kişisel başarı ve pandemi servisinde çalışmanın bakım davranışları üzerinde anlamlı bir etkisi vardır. Duyarsızlaşma bakım davranışlarını olumsuz yönde etkilerken, kişisel başarı, duygusal tükenme ve pandemi servisinde çalışma bakım davranışlarını artırmıştır. **Sonuç:** Bu çalışmada literatürden farklı olarak hemşirelerin neredeyse tamamı orta ve yüksek düzeyde kişisel başarı tükenmişliği yaşamaktadır. Bakım verme davranışı duyarsızlaşmadan olumsuz etkilenmiştir. Hemşirelik müfredatı ve sağlık politikaları hemşireleri olası krizlere hazırlamalı ve hemşirelere yönelik psikososyal destek artırılmalıdır.

Anahtar Kelimeler: Tükenmişlik; bakım davranışı; COVID-19; hemşireler; pandemi

Nightingale emphasized sensitivity, spirituality, and compassion in nursing care. When the nursing discipline began to develop, nurse theorists defined care as the essence and basis of the nursing. Conceptually, care was addressed in nursing theories in the 1970s and was recognized as the heart of humanist

clinical nursing practices that distinguished nurses from other health professionals. Leininger and Watson drew attention care behaviors, caring relationships, and processes.[1] Wolf based on human care theory, defined caring behaviors (CB) with the dimensions of human presence, knowledge and skill, respectful deference to others, and positive connectedness.[2] Sociodemographic characteristics, education, job satisfaction, emotional intelligence, and experiences of nurses have a direct effect on CB.[3] The time devoted to care, job satisfaction, overtime working, management support and environment in which care is given affect the care behavior of nurses.[4] The individual characteristics of nurses and the work environment can lead to burnouts and affect CB.[5]

Burnout is defined as emotional and psychological distress that develops due to work environments, and it is very common among medical personnel. Workload, control, reward, fairness, community, and value at work are six factors of the workplace that influence the occurrence of burnout.[6] Occupational practices in nursing and workload, overtime work, number of patients per nurse, and working with the terminally ill increase the likelihood of physical and emotional exhaustion (EE).[7]

During the coronavirus disease-2019 (COVID-19) pandemic, routines were changed by making changes in the functioning of healthcare institutions; healthcare teams were reorganized for the care and treatment of COVID-19 patients, and changes were made in the health care system in line with the changing pandemic conditions. Nurses who provided and continue to provide uninterrupted care during the COVID-19 pandemic are exposed to high-risk situations. Causes of burnout include fear of infection, concerns about infecting colleagues and family, high environmental risk, limited personal protective equipment, increased workload, and lack of COVID-19-specific education and training.[8] Due to the COVID-19 pandemic, anxiety, depression, and burnout rates have significantly increased among nurses.[7] While the global prevalence of burnout among nurses was 11.2% before the pandemic, a systematic review that examine the nurses' burnout and associated risk factors during the COVID-19 pandemic reported that 34.1% of the nurses had EE, 12.6% had depersonalization (DP), and 15.2% had personal achievement (PA) scores above the respective cut-off values.[8,9] Burnout is more common, especially among nurses who work in intensive care; young, female, and inexperienced nurses; nurses who lack psychological support, nurses who do not work with supportive leaders; nurses with a history of psychological problems; and nurses who work at the front lines during the pandemic.[10]

Burnout negatively affects both CB and patient outcomes through decrease in the quality of patient care, deterioration of communication, reduced patient care quality reporting and increasing medication errors.[4,11-13] This leads to occupational problems such as deterioration of mental health among nurses, increased inclination to quit, decreased job satisfaction, and exposure to verbal violence by the patients and their relatives.[4,13,14]

Although there are many studies revealing that the burnout level of nurses has increased in the pandemic, studies evaluating the effect of increasing burnout on nursing behaviors, which is the main role of nurses, are limited.[15,16] This study is important in terms of burnout risk level of the Maslach Burnout Inventory (MBI) for health personnel according to Turkish society and determining the effect on care behaviors of burnout sub-dimensions. It is thought that the results of this study will guide researchers, leading nurses and policy makers for the studies and programs to be planned for of nurse development care behaviors and reducing burnout. This study was to determine the burnout levels and CBs of nurses during the COVID-19 pandemic in west region Türkiye and to evaluate the effects of nurses' sociodemographic characteristics, pandemic process and burnout on care behaviors.

▌ MATERIAL AND METHODS

RESEARCH TYPE

It was a descriptive, cross-sectional study. The STROBE Statement checklist was used for ensuring that the research methodology adhered to standards. The research questions of study are:

1. What is the burnout level of nurses during the COVID-19 pandemic?

2. What is the nurses' CBs scores during the COVID-19 pandemic?

3. Is there a difference between the care behaviors of nurses according to their descriptive characteristics during the COVID-19 pandemic?

4. What are the factors affecting CBs of nurses?

POPULATION AND DATA COLLECTION

This study was carried out at a state hospital in Denizli, in western Türkiye. Data was collected between April and May 2021. The research population consisted of nurses working in this hospital. The sample size was calculated using the G Power package program (Version 3.1.9.2. Heinrich Heine-Universitat, Duysseldorf, Germany). Through the reference study, it was observed that the resulting effect magnitude was moderate (r=0.251).[17] Considering that a lower level of effect size could be obtained (r=0.2), sample size was calculated as 150 participants with 80% power at 95% confidence level. The study was conducted with totally 150 nurses and there is no missing data. Data collected with data collection forms. Data collection forms were distributed to nurses, nurses filled out the forms by themselves. It takes approximately fifteen minutes.

Inclusion criteria were working at the hospital and volunteering to participate in the study. Participants were informed about the study. The existence of incomplete information was adopted as exclusion criterion. Nevertheless, no questionnaire was excluded.

DATA COLLECTION TOOLS

General Characteristics and COVID-19-Related Variables

Gender, age, marital status, having children, educational status, work experience, the ward nurses worked in before the pandemic/during the pandemic, and weekly work hours. Situations that cause anxiety during the pandemic, changing situations, and request for support.[17,18]

MBI

Burnout levels were assessed using the MBI.[19] It was adapted into Turkish by Ergin.[20] It has three sub-dimensions: EE, DP, PA. In a Turkish validity and reliability study, Ergin concluded that the cut-off scores, for Turkish health personnel, for low, moderate, and high risk were ≤20, 21-25, and ≥26 points for EE and ≤7, 8-12, and ≥13 points for DP, respectively. For PA, the cut-off scores were ≤21 points for high risk, 22-27 points for moderate risk, and ≥28 points for low risk.[20,21] Increase in EE and DP scores indicate an increased level of burnout in these dimensions. In contrast, a decrease in PA scores indicates increased level of burnout. Cronbach's α coefficients calculated in the present study were good (EE: 0.92, DP: 0.75, PA: 0.74).

Caring Behaviors Inventory-24

The CB of nurses were determined by Caring Behaviors Inventory-24 (CBI). CBI was originally developed by Wolf, revised by Wu et al.[2,22] CBI measures CB in four sub-dimensions (assurance of human presence, knowledge and skill, respectful deference to others, positive connectedness) with 6-point Likert-type scale: 1 (never), 2 (almost never), 3 (sometimes), 4 (usually), 5 (often) and 6 (always). To calculate the scores, each item's score was added up and the total was divided by 24 to yield a total score between 1 and 6. The score of the items in the subdimensions was tallied, and the score received was divided by the number of items, yielding subdimension scale scores ranging from 1 to 6. As the subdimension and total scale score climbed, so did the sense of CB. The internal consistency and validity coefficients of CBI-24 were reported as α=0.95 and r=0.82. The Turkish version adapted by Kurşun and Kanan had a validity score of r=0.82 and a consistency coefficient of α=0.96.[23] Cronbach's α coefficients of all sub-dimensions were good (assurance of human presence 0.94, knowledge and skill 0.81, respectful deference to others 0.90, positive connectedness 0.85). In this research, Cronbach's α coefficient was calculated as 0.95, and all sub dimension Cronbach's α coefficients were 0.94, 0.83, 0.86, 0.84 respectively.

ANALYSIS AND EVALUATION OF DATA

Data was analyzed using SPSS Version 25.0 (IBM, Armonk, NY, USA). Continuous variables were presented as mean±standard deviation, and categorical variables were presented as number and percentages. Shapiro-Wilk test was used for the determination of normal distribution and independent samples t-test was performed for normally distributed variables. Mann-Whitney U test, and Kruskal-Wallis variance analysis were used to compare differences between independent groups because nurse's care behaviors scores did not show normal distribution according to sociodemographic variables. The relationships between continuous variables were examined using Pearson correlation analysis. Multiple linear regression analysis was performed to make predictions about CBs. All test assumptions for multiple linear regression were met in the model (tolerance value <0.1, variance inflation factor <4, autocorrelation: Durbin Watson=1,974, normality, and heteroscedasticity). Categorical variables were coded as dummy variables (working in the pandemic ward, 0=pandemic wards, 1=others). For all analyses, $p \leq 0.05$ was considered statistically significant. The descriptive characteristics of nurses constitute the independent variables of the research. The nurses's burnout scale sub-dimension scores and caring behavior scale general and sub-dimension scores are the dependent variables of the research.

ETHICAL PROCEDURE

The research protocol has been approved by the ethics committee of Pamukkale University Medical Ethics Committee (date: January 26, 2021, no: E-60116787-020-9344). Permission has been obtained from the hospital where the study was planned to be conducted. Oral and written consent have been obtained from the nurses who voluntarily accepted to participate in the study. The study was conducted according to Helsinki Declaration to protect participants. Permission was obtained from the scale authors for the use of the scales. No ethical issues arose in the study.

RESULTS

CHARACTERISTICS OF PARTICIPANTS

The majority of nurses were 36-45 years old (39.3%) and female (90.7%). Of the nurses, 72.7% were mar-

ried, 67.3% had children, whereas 73.3% had undergraduate degree, and 39.3% had worked as nurses for more than 20 years. Of these nurses, 53.3% were working in non-pandemic clinics during pandemic, and 71.3% were working day-night shifts. 62.7% of the nurses were working overtime (Table 1).

The most common causes of anxiety during the COVID-19 pandemic were fear of disease transmission (83.3%), fear of transmission to family-relatives (92%) as well as increased workload (87.3%). Most nurses stated that they experienced deterioration in sleep quality, increased workload, and decreased rest time during the COVID-19 pandemic, whereas 66.7% of the nurse's mentioned requests for psychological support (Table 1).

BURNOUT AND CARE BEHAVIORS

Mean scores of the nurses were 20.81±7.86 for EE, 5.70±3.71 for DP, and 19.70±4.61 for PA sub-dimensions. Based on the cut-off scores calculated for the MBI Turkish form, 30% of the nurses were at high risk in the EE sub-dimension, 17.3% were at moderate risk in the DP sub-dimension, and 63.3% were at high risk in the PA sub-dimension (Table 2). The mean CBI score was 5.05±0.57 and the highest score was obtained in the knowledge and skill sub-dimension (5.46±0.58) (Table 2).

When the sociodemographic and professional characteristics of the nurses as well as COVID-19-related variables were examined with respect to CBI scores, it was found that the CBI scores did not make any significant difference in any of the variables (Table 1). These data have not shown at the tables; however, a significant negative correlation was found between CBI and DP scores (r=-0.269, p=0.001), a significant positive correlation was found between CBI and PA scores (r=0.338, p=0.000), and a negative correlation was found between CBI scores and work experience (r=-0.158, p=0.054). No correlation was found between CBI and age and EE.

MULTIPLE REGRESSION ANALYSIS OF FACTORS ASSOCIATED WITH CARE BEHAVIORS

Multiple linear regression analyses were performed to assess CB and MBI sub-dimension scores (EE, DP,

TABLE 1: Descriptive characteristics of nurses and their relationship with Caring Behaviors Inventory (n=150).					
Variable	n	%	X̄±SD	Median (Minimum-Maximum)	p value
Age					
≤25	15	10.0	5.30±0.54	5.46 (4.17-5.92)	0.289*
26-35	42	28.0	5.08±0.53	5 (3.83-5.92)	
36-45	59	39.3	5.07±0.49	5.17 (3.92-5.88)	
46-55	34	22.7	4.90±0.73	5 (2.96-5.88)	
Gender					
Female	136	90.7	5.07±0.57	5.10 (2.96-5.92)	0.208**
Male	14	9.3	4.90±0.6	4.90 (3.58-5.88)	
Marital status					
Married	109	72.7	5.02±0.59	5.08 (2.96-5.92)	0.280**
Single	41	27.3	5.15±0.53	5.17 (4.17-5.92)	
Children					
Yes	101	67.3	5.04±0.59	5.08 (2.96-5.88)	0.869**
No	49	32.7	5.08±0.55	5.08 (3.83-5.92)	
Education status					
High school	9	6.0	4.97±0.7	5.08 (3.58-5.71)	0.616*
Associate degree	19	12.7	5.08±0.86	5.21 (2.96-5.92)	
Undergraduate degree	110	73.3	5.07±0.52	5.06 (3.83-5.92)	
Master's degree	12	8.0	4.96±0.46	5.02 (4.25-5.71)	
Work experience (years)					
1-3	18	12.0	5.29±0.54	5.44 (4.17-5.92)	0.131*
4-5	6	4.0	4.74±0.46	4.88 (3.83-5.08)	
6-10	27	18.0	5.17±0.51	5.17 (4.21-5.92)	
11-20	40	26.7	5.03±0.54	5.06 (3.29-5.88)	
>20	59	39.3	4.98±0.62	5 (2.96-5.88)	
The ward nurses were working before COVID-19					
Medical clinics	36	24.0	5.15±0.58	5.19 (3.92-5.88)	0.572*
Surgical clinics	29	19.3	5.04±0.62	5 (3.58-5.88)	
Intensive care unit	35	23.3	5.01±0.48	4.96 (3.92-5.92)	
Outpatient clinics	13	8.70	5.08±0.78	5.17 (2.96-5.92)	
Surgery	8	5.30	5.02±0.29	4.98 (4.54-5.42)	
Other	29	19.4	4.91±0.57	5.04 (3.29-5.92)	
The ward nurses were working during COVID-19					
COVID-19 medical	21	14.0	5.18±0.61	5.46 (3.92-5.88)	0.102*
COVID-19 intensive care unit	32	21.3	5.05±0.49	5.08 (3.92-5.88)	
COVID-19 outpatient care	17	11.3	5.28±0.54	5.38 (4.17-5.92)	
Non-COVID-19 clinics	80	53.3	4.97±0.59	5 (2.96-5.92)	
Shifts					
Day	35	23.3	4.95±0.65	5.08 (3.29-5.88)	0.679*
Night	8	5.3	5.02±0.61	5.04 (4.29-5.92)	
Day-night mixed shifts	107	71.3	5.09±0.55	5.08 (2.96-5.92)	
Weekly working hours					
45 hours	35	23.3	5.02±0.68	5.13 (2.96-5.92)	0.400*
Less than 45 hours	21	14.0	5.18±0.56	5.29 (3.83-5.79)	
More than 45 hours	94	62.7	5.04±0.54	5 (3.58-5.92)	
Situations that cause anxiety during the COVID-19 pandemic					
Fear of COVID-19 transmission					
No	25	16.7	5.03±0.65	5.08 (3.58-5.75)	0.912**
Yes	125	83.3	5.06±0.56	5.08 (2.96-5.92)	
Infecting spouses, children or relatives					
No	12	8.0	5±0.78	5.02 (3.29-5.92)	0.732***
Yes	138	92.0	5.06±0.56	5.08 (2.96-5.92)	

TABLE 1: Descriptive characteristics of nurses and their relationship with Caring Behaviors Inventory (n=150) *(devamı)*.					
Variable	n	%	X̄±SD	Median (Minimum-Maximum)	p value
Inability to care for children					
No	76	50.7	5.01±0.59	5.08 (3.29-5.92)	0.334 ***
Yes	74	49.3	5.1±0.56	5.10 (2.96-5.88)	
Not being able to meet daily needs					
No	75	50.0	5.02±0.57	5.08 (3.29-5.92)	0.732***
Yes	75	50.0	5.09±0.58	5.13 (2.96-5.92)	
High workload					
No	19	12.7	5±0.71	5.08 (3.29-5.75)	0.941**
Yes	131	87.3	5.06±0.56	5.08 (2.96-5.92)	
Inadequate personal protective equipment					
No	93	62.0	5.09±0.55	5.08 (3.29-5.92)	0.450**
Yes	57	38.0	5±0.61	5 (2.96-5.88)	
Changing conditions during the COVID-19 pandemic					
Decreased sleep quality					
No	31	20.7	5.01±0.56	5.08 (3.58-5.75)	0.665***
Yes	119	79.3	5.07±0.58	5.08 (2.96-5.92)	
Start/increase alcohol consumption and/or smoking					
No	114	76.0	5.03±0.59	5.08 (2.96-5.92)	0.460**
Yes	36	24.0	5.14±0.52	5.15 (3.88-5.92)	
Deterioration of nutrition					
No	83	55.3	5.02±0.59	5.08 (2.96-5.92)	0.348***
Yes	67	44.7	5.10±0.56	5.08 (3.58-5.92)	
Increased workload					
No	13	8.7	4.90±0.76	5.08 (3.29-5.79)	0.600**
Yes	137	91.3	5.07±0.56	5.08 (2.96-5.92)	
Reduced rest time					
No	27	18.0	4.98±0.6	5 (3.29-5.75)	0.546**
Yes	123	82.0	5.07±0.57	5.08 (2.96-5.92)	
Request for support during the COVID-19 pandemic					
Increasing the number of personnel					
No	16	10.7	4.85±0.75	5 (3.29-5.79)	0.303**
Yes	134	89.3	5.08±0.55	5.08 (2.96-5.92)	
Granting work allowance to those working in a high-risk unit					
No	13	8.7	4.77±0.79	4.88 (3.29-5.88)	0.189**
Yes	137	91.3	5.08±0.55	5.08 (2.96-5.92)	
Psychological counseling and support					
No	50	33.3	5.12±0.65	5.23 (2.96-5.92)	0.321***
Yes	100	66.7	5.02±0.53	5.02 (3.29-5.92)	

*The Kruskal-Wallis test; **Mann-Whitney U test; ***The Independent samples t-test; SD: Standard deviation.

and PA) with reference to work during the pandemic. The results showed that the model was significant [$F_{(4,145)}=11.69$, $p<0.001$]. It was determined that EE, DP, and PA scores, and working in a pandemic ward were significant predictors of CB ($p<0.05$). DP had a negative effect on CB, whereas EE, increased PA and working in a pandemic ward had a positive effect on CB (Table 3).

▌ DISCUSSION

This study was conducted after the second wave of the COVID-19 pandemic, to evaluate burnout levels and CB of nurses. Multiple regression analysis revealed that all dimensions of burnout and working in a pandemic ward were factors affecting the CB of nurses.

TABLE 2: Burnout level of nurses and Caring Behaviors Inventory scores (n=150).						
	Low risk		Medium risk		High risk	
	n	%	n	%	n	%
Maslach Burnout Inventory						
Emotional exhaustion	74	49.3	31	20.7	45	30.0
Depersonalization	118	78.7	26	17.3	6	4.0
Personal achievement	3	2.0	52	34.7	95	63.3
	Mean	**SD**	**Minimum**	**Maximum**	**Cronbach's α**	**Range**
Emotional exhaustion	20.81	7.86	1	36	0.91	0-36
Depersonalization	5.70	3.71	0	20	0.75	0-20
Personal achievement	19.70	4.61	1	32	0.74	0-32
Caring Behaviors Inventory						
Assurance of human presence	5.15	0.68	3	6	0.92	1-6
Knowledge and skill	5.46	0.58	3	6	0.83	1-6
Respectful deference to others	5.04	0.65	3	6	0.86	1-6
Positive connectedness	4.94	0.70	3	6	0.84	1-6
Caring Behaviors Inventory total	5.05	0.57	2.96	5.92	0.96	1-6

SD: Standard deviation.

TABLE 3: Multiple linear regression analysis of factors associated with Caring Behaviors Inventory (n=150).							
Caring Behaviors Inventory	Standard. beta	t	p value	95% CI lower	95% CI upper	R²	Adj R²
Model						0.244	0.223
Costant		17.389	0.000	3.798	4.773		
Depersonalization	-0.355	-4.158	0.000	-0.081	-0.029		
Emotional exhaustion	0.210	2.423	0.017	0.003	0.028		
Personal achievement	0.371	4.910	0.000	0.028	0.065		
Working in the pandemic ward	0.244	3.312	0.001	0.113	0.447		

$F_{(4,145)}=11.69$, p<0.001, Durbin Watson: 1.974; CI: Confidence interval.

BURNOUT LEVELS OF NURSES

The scores of nurses for the sub dimensions of EE and PA, were moderate, whereas DP scores were lower. One in three nurses experienced high levels of EE and moderate levels of PA. A study conducted after the first wave of COVID-19, reported that the average EE level of nurses was lower than the findings of this study, whereas PA and DP scores were higher.[24] In another study, conducted before the pandemic, it was observed that while the PA level of nurses were higher compared to the findings of the present study, EE and DP scores were higher.[25]

In a systematic review conducted before the COVID-19 pandemic, the prevalence of global burnout symptoms was found to be 11.2% among nurses. When regional differences were examined, it was observed that the highest level of burnout was in sub-Saharan Africa and the lowest level was in Europe and Central Asia.[9] Prior to the pandemic, 54% of nurses in the United States reported moderate and 28% reported high levels of burnout. The evaluation was repeated one year after the pandemic, and it was determined that EE levels increased by 10% and DP levels increased by 19%. Those who have experienced death within the last month, women, and nurses, and young people working day shifts were identified as vulnerable groups in terms of burnout.[26] It is seen that burnout levels increased among health professionals on a global scale during the COVID-19 pandemic. A study conducted with nurses in China

reported that EE levels were high and DP levels were moderate.[7] The pandemic has not affected the perceived PA of nurses. Burnout levels are high in women working in intensive care and COVID-19 clinics.[7] In Italy, where the pandemic conditions were very severe, approximately half of nurses reported EE and a decrease in PA, whereas 29.7% reported DP. Burnout levels were high especially in nurses working in intensive care and COVID-19 clinics.[14] It was reported that more than half of the healthcare professionals in Malaysia experienced burnout during the COVID-19 pandemic. Participants defined workload, uncertainties caused by the pandemic, difficulty maintaining work-family balance, and stressful interpersonal relationships at the workplace as factors leading to burnout.[27] In this study, nearly all of the nurses stated that they experienced anxiety due to fear of COVID-19 transmission and infecting their family-relatives as well as increasing workload. It is thought that the deterioration of sleep quality in most of the nurses and the need for psychological support in more than half of the nurses are associated with burnout. In a study conducted in Brazil, almost all of the nurses experienced a high/medium level EE and a decrease in PA. Sleep disorders were found to be significantly higher in those who experience high/medium burnout in all dimensions of burnout.[28]

CARE BEHAVIORS

The perceived level of CB among the nurses included in this study was found to be high. The highest score was obtained in the knowledge and skills sub-dimension, whereas the lowest score was obtained in the commitment sub-dimension. In Türkiye, nurses mostly view nursing as technical work, consultation with doctors, and application of medication.[29] In a systematic review that examined CB, it was reported that the nature of nursing care was influenced by the work environment, emotional intelligence and coping skills of nurses, and sociodemographic characteristics. The authors reported that nurses' perception of care was higher compared to the patients, and care was perceived from a more technical point of view.[30] In this study, there was no difference in care behaviors according to the stress sources such as increased workload, insufficient protective equipment, and the

use of wrong coping methods such as increasing alcohol and cigarette use.

In the studies of Hajibabaee et al. and Inocian et al. the care behaviors of nurses during the pandemic are close to the findings of this study.[16,31] In a study conducted with nurses of different ethnic origins in Saudi Arabia, interestingly, Inocian et al. found that women and having a master's degree had a significant negative impact on care behaviors, while in this study, the quality-of-life burnout sub-dimension had a positive effect on care behaviors, as in the finding of EE.[16] In this study, while sociodemographic factors and stress sources associated with the pandemic did not affect CBs, DP seriously affected them.

CB of emergency room nurses and the quality of home-work balance were evaluated in Iran. The highest score was obtained in the sub-dimensions of knowledge and skills as well as respectful deference to others, whereas the lowest score was obtained in the commitment sub-dimension. Old age and the male gender were identified as negative predictors of CB, and work environment was identified as a positive predictor. Young nurses, female nurses with more children, nurses working a fixed shift, more experienced nurses, and nurses with a bachelor's degree were found to have a better home-work balance. These variables directly affect CB.[3] However, in this study, care behaviors do not change among sociodemographic characteristics such as working shift, experience, and educational status.

In this study, DP of nurses was the factor that reduced CB. It is seen that increased PA, EE and working in a pandemic ward have a positive effect on CB. However, surprisingly, the care behaviors of nurses working in the pandemic clinic are higher. In a study by Shen et al. conducted in oncology clinics, PA and family anxiety were identified as positive predictors of CB, whereas DP and education level were identified as negative predictors.[17] Researchers have noted the negative relationship between CB and depression, distress, and EE; positive coping mechanisms, self-sufficiency, self-regulation, and a positive attitude toward the workplace have a positive effect on CB.[32] Lasalvia et al. reported that all sub-dimensions of burnout reduce nurses' efforts to improve CB and can

lead to communication problems.[14] However, the results of the study showed that EE positively affected CB.

In a study by Foster et al., work environment, external sources of motivation, and management support were found to affect CB, whereas Oluma and Abadiga showed that personal, professional, and nursing management satisfaction, and joint participation in CB were factors affecting CB among nurses.[33,34] In a study conducted with nurses in Indonesia, it was found that salary, conditional rewards, inspection, and communication explained 20% of the variance in CB.[4] Putra et al. also concluded that the good work environment created by executive nurses improved CB by reducing the factors affecting burnout.[35] The authors reported that executive nurses influenced EE and DP through CB, rewards, audits, and distribution of workload. Nurse leaders are role models and have a leading role in increasing the PA of nurses. Improvement in the psychological environment and adoption of appropriate leadership decreases burnout, strengthening CB.[14] The perception of PA affects CB and the quality of care.[10] To improve CB, studies have emphasized clinical supervision, education, improvement of personal well-being, and better management support.[32,34,35]

RELEVANCE TO CLINICAL PRACTICE AND RESEARCH

The results of this study show that nurses should be psychosocially empowered for dealing with situations of crisis like war, pandemic, or disaster. In order to improve the quality of care, nurses need to develop healthy coping methods starting with vocational training, in addition to developing social support networks. After graduation, nurses may encounter sudden social changes. The formal education received by nurses may not be sufficient to cope with these situations. For this reason, nurses should be supported to develop their knowledge and skills, and good leadership models should be adopted and put into practice in order to maintain quality patient care. Therefore, nursing curricula and health policies should be reviewed and taken for action for this purpose.

LIMITATIONS

This study was conducted after the second wave of the COVID-19 pandemic in a state hospital. The study was conducted in a single center; therefore, the results cannot be generalized to the entire population. As part of the vaccination efforts, all health personnel have been vaccinated as a priority in Türkiye. Psychological relaxation and the feeling of safety after receiving vaccinated may have influenced the participants' responses.

CONCLUSION

Approximately one in three nurses experienced high levels of EE and moderate burnout in terms of PA. DP negatively affected care behaviors, whereas PA, EE and working in the pandemic ward increased care behaviors.

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