



The relationship between nurses' work stress levels and work-family conflict during the COVID-19 pandemic and the affecting factors: A study from Turkey

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ABSTRACT

Purpose: High work-family conflict affects nurses' physical, mental and psychological health and reduces their job satisfaction and performance. This study was conducted to determine the effect of work stress experienced by nurses during the COVID-19 pandemic on family life and the factors affecting work stress and work-family conflict.

Method: This descriptive and cross-sectional study was conducted on 820 nurses who agreed to participate in the research working in a hospital serving only patients with confirmed COVID-19 in a province in eastern Turkey.

Results: It was found that the average PJSS score of the nurses included in the study was 3.26 ± 0.56 ; the average WAFCS score was 3.00 ± 0.81 . It was found that there was a moderately positive, statistically significant relationship between the PJSS and WAFCS average scores for the nurses, and the impact of work stress on the levels of work-family conflict was 28 % ($p < 0.001$).

Conclusion: It was determined that the work stress levels of the nurses included in the study were at a level that could threaten their health, the conflict levels in work-family life were high, and the conflict levels in work and family life increased as the levels of work stress increased.

Introduction

The COVID-19 pandemic is a global outbreak of coronavirus, an infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) virus. The first cases of novel coronavirus (nCoV) were first detected in China in December 2019, with the virus spreading rapidly to other countries across the world. This led WHO to declare a Public Health Emergency of International Concern on 30 January 2020, and to characterize the outbreak as a pandemic on 11 March 2020 (WHO, n.d.). During the pandemic, additional units were established in hospitals in many countries, including Turkey, to reduce the rate of COVID-19 infection, treat infected people, and provide isolation measures. Some hospitals became institutions dedicated solely to the treatment of COVID-19 patients (Cai et al., 2020).

Nurses, who played an essential role on the medical team, had to adapt to new protocols and new norms and experienced increased work intensity (Billings et al., 2020). These norms include changes in the ratio of nurse-patient numbers during the pandemic, caring for a risky group,

risk of transmission of the disease to nurses, lack of treatment and vaccine, changes in the working system, caring for patients with protective equipment during busy working hours, and transmitting the virus to other patients or their families. This possibility caused nurses to face emotions such as fear, anger, anxiety, uncertainty and burnout. Nurses put aside the anxiety of being together with people infected with Covid-19 in this process and became the people who played an active role in the care of all these patients.

These factors led to fear, anger, anxiety, uncertainty, and burnout among nurses (Al Maqbali et al., 2021; Olaya et al., 2021). Nurses began to experience difficulties balancing family and work roles. They tried to cope with multiple problems such as increased working hours, excessive workload, difficult working conditions and the pandemic (Tekingunduz et al., 2015).

Sometimes, the events experienced in the work environment are reflected in family life, while family life and relationships can sometimes be reflected in business life. The emergence of both conditions can negatively affect the psychological health of the individual. These

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challenges in balance reveal a sense of conflict. High work-family conflict affects nurses' physical, mental and psychological health, professional life and job satisfaction, performance, commitment to their work, reduced professional effectiveness, and increased work stress (Cai et al., 2020).

Although there are many studies on the psychosocial problems experienced by nurses during the COVID-19 pandemic, there is no study on the impact of work stress on family life during that period. This study sought to investigate the effect of work stress experienced by nurses on their family life during the COVID-19 pandemic and to determine the factors contributing to work pressure and work-family conflict levels.

The research questions of this study are as follows;

- What factors affect the levels of work stress experienced by nurses and work-family conflict?
- What are the levels of work stress perceived by nurses in the study?
- What are the levels of conflict in nurses' work-family life?
- Is there a relationship between the levels of work stress experienced by nurses and work-family conflict?
- Does work stress experienced by nurses affect the work-family conflict?

Methods

Design

This study was conducted using a descriptive and cross-sectional research design. The study population consisted of 1.479 nurses working at a hospital serving only confirmed COVID-19 patients in a province in eastern Turkey.

Participants

The study sample consisted of 820 nurses who agreed to participate in the research and worked in the hospital between December 25, 2020, and February 10, 2021 (the study participation rate was 55 %).

Measures

The Descriptive Characteristics Form, Perceived Job Stress Scale (PJSS), and Work-Family Conflict Scale (WFCS), were used in the data collection.

Descriptive characteristics form

This form, prepared by the researchers, consisted of 18 items to identify descriptive characteristics such as age, gender, education level, and professional features such as the working unit, type of working, and the number of patients cared for by the nurses.

Perceived Job Stress Scale

The scale was developed by Cohen and Williamson (1988), and its Turkish validity and reliability study was conducted by Baltas (1998). The 5-point Likert type scale consisted of 15 items. In evaluating the scale, the total score obtained was divided by 15, resulting in the average scale score of the individuals. The stress rating on the scale is as follows. A. (1.0–1.3) Severe risk level that seriously threatens health and productivity; B. (1.4–1.9) the stress level that does not make the person feel important, does not allow him/her to use his/her capacity, and does not provide enough stimulation, resulting from boredom and a sense of insignificance; C. (2.0–2.5) a light job with stimulating aspects. It is boring for someone with a high achievement motivation, and an appropriate level of job stress for someone who is not challenging; D. (2.6–3.1) it is the most favorable stress level in terms of health and productivity; E. (3.2–3.4) it is a stress level that is highly stimulating and

requires a lot of responsibility, but is attractive to the person. While it increases productivity by forcing the person in some aspects, it can threaten health in some aspects; F. (3.5–4.0) it is a stress level that requires a high level of responsibility, forces the person in terms of time, does not allow rest and family relations, and therefore poses a threat to health and productivity (Baltas, 1998). Based on the average scores taken, A, B, E, and F are evaluated as stress levels that could affect productivity and threaten health. At the same time, C and D were rated as stress levels that create a stimulus effect and increase success.

The Cronbach's alpha value of the scale was found as 0.84 by Baltas (1998). In this study, Cronbach's alpha value was found to be 0.84.

Work-Family Life Conflict Scale

The scale was developed by Netemeyer et al. (1996), and its Turkish validity and reliability study was conducted by Efeoglu (2006). The scale consisted of two sub-scales: work-family conflict and family-work conflict. Each sub-scale consisted of five items and showed the level of conflict in the corresponding sub-scale. In this study, the scale of work-family conflict originating from work life was used. The lowest and highest scores on the scale were 1 and 5, respectively. High scores obtained from the scale indicate a high level of conflict in one's work and family life. Efeoglu (2006) calculated the Cronbach's alpha coefficient of the work-family life conflict scale as 0.74. In this study, the Cronbach's alpha coefficient of the scale was 0.88.

Data collection

To reduce the risk of transmission of COVID-19 infection, data collection tools were collected through an online questionnaire created through google forms. The link of the online questionnaire was sent to the nurses' WhatsApp and social media applications (<http://www.surveymonkey.com/SurveyStart.aspx?lang=1&surv=43cc9b7b97a049ac999968c04990040e>).

Data analysis

In this study, the power analysis was performed following the data collection using the G Power 3.1.9.2 program. The relationship between the work stress levels of the nurses and their work-family conflict levels was tested using the Pearson correlation analysis. Accordingly, the power was calculated as 0.99 with an effect size of 0.537 and an alpha error value of 0.05.

The data obtained for the study were evaluated using the IBM SPSS 20 software. The data were assessed using percentage distributions, averages, the independent samples *t*-test, one-way analysis of variance (ANOVA), Kruskal-Wallis test, multiple linear regression, Pearson correlation analyses and linear regression.

Ethical considerations

Ethical approval to conduct the research was obtained from the Atatürk University, Faculty of Medicine Ethics Committee (No: B.30.2. ATA.0.01.00/533, date: December 17, 2020). Permission was obtained from the institution where the nurses worked and verbal consent was obtained from the nurses.

Results

Descriptive statistics

In the study, 70.5 % of the nurses were female, 46.1 % were in the 20–25 age group, and 65 % had a bachelor's degree. Of the nurses, 63.3 % were single, 77.1 % had no children, 84.5 % lived in a nuclear family, and 34 % lived with a spouse/children. It was found that 54 % of the nurses had a chronic illness, 78.7 % did not smoke, and 92.4 % was not

exercising regularly (Table 1).

There was a statistically significant difference between the average PJSS and WAFCS scores of the nurses regarding age and children ($p < 0.05$). The difference in their WAFCS score averages was also statistically significant in family type ($p < 0.05$). There was a statistically significant difference between their average PJSS scores based on the people they lived with ($p < 0.05$, Table 1).

Of the survey participants, 74.3 % of the nurses loved their profession, 69.8 % worked in alternating shifts day and night, and 47.9 % had an average daily working time of 8–10 h in a shift. In addition, 43.8 % of the nurses worked in an inpatient clinic, 35.9 % provided care for 1–5 patients a day, and 86.3 % had not participated in any stress-related activities before (Table 2).

A statistically significant difference was found between the average PJSS and WAFCS scores based on professional status, working units, and

the number of patients cared for by the nurses ($p < 0.001$). The difference between the average WAFCS scores was statistically significant in terms of the type of working and participation in any activity related to stress management ($p < 0.05$, Table 2).

As shown in Table 3, the age of the nurses and the people they lived with affected work stress levels negatively, and the status of children and love of the profession positively affected the work stress levels with a statistical significance ($p < 0.001$).

Table 4 shows that the nurses' age, marital status, and working unit negatively affected their work-family conflict levels. Love of profession, the number of patients cared for, and the working style positively impacted their work-family conflict, with a statistical significance ($p < 0.001$).

The average PJSS score of the nurses included in the study was 3.26 ± 0.56 , and their average WAFCS score was 3.00 ± 0.81 (Table 5).

Table 1
Distribution of nurses' descriptive characteristics and comparison of PJSS and WAFCS score averages according to descriptive characteristics.

Descriptive characteristics	n	%	Perceived Job Stress Scale		Test and p value	Work-Family Life Conflict Scale		Test and p value
			Mean	SD		Mean	SD	
<i>Gender</i>								
Female	578	70.5	3.26	0.56	$t = 0.199$	2.98	0.77	$t = 0.999$
Male	242	29.5	3.25	0.57	$p = 0.842$	3.05	0.90	$p = 0.318$
<i>Age</i>								
Between 20 and 25 years ¹	378	46.1	3.34	0.52	$F = 11.599$	3.11	0.75	$F = 11.069$
Between 26 and 30 years ²	298	36.3	3.27	0.57	$p = 0.000^{**}$	3.02	0.84	$p = 0.000^{**}$
Between 31 and 35 years ³	72	8.8	2.94	0.49	1-3 ^a , 1-4 ^a	2.58	0.80	1-3 ^a , 1-4 ^a
36 years and above ⁴	72	8.8	3.13	0.65	2-3 ^a	2.77	0.82	2-3 ^a
<i>Education level</i>								
Vocational school of health	207	25.2	3.27	0.59	$F = 1.071$	2.95	0.85	$F = 0.636$
Bachelor's degree	533	65.0	3.27	0.53	$p = 0.343$	3.02	0.79	$p = 0.529$
Master's degree	80	9.8	3.17	0.68		2.99	0.85	
<i>Marital status</i>								
Married	301	36.7	3.26	0.56	$t = 0.144$	3.02	0.80	$t = 0.521$
Single	519	63.3	3.26	0.56	$p = 0.885$	2.99	0.82	$p = 0.603$
<i>Having children</i>								
Yes	188	22.9	3.15	0.55	$t = 3.001$	2.88	0.79	$t = 2.322$
No	632	77.1	3.29	0.56	$p = 0.003$	3.04	0.81	$p = 0.021$
<i>Family type</i>								
Nuclear family	693	84.5	3.25	0.57	$t = 0.639$	2.98	0.81	$t = 1.999$
Extended family	127	15.5	3.29	0.49	$p = 0.523$	3.14	0.76	$p = 0.046^*$
<i>Living condition</i>								
With spouse/children ¹	279	34.0	3.28	0.57	$F = 6.967$	3.01	0.80	$F = 2.121$
With parents ²	91	11.1	3.11	0.56	$p = 0.000^{**}$	2.90	0.81	$p = 0.096$
With housemate ³	205	25.0	3.39	0.46	2-3 ^a , 3-4 ^a	3.11	0.71	
Alone ⁴	245	29.9	3.19	0.60		2.94	0.88	
<i>Presence of chronic diseases</i>								
Yes	443	54.0	3.28	0.54	$t = 0.873$	3.00	0.79	$t = 0.151$
No	377	46.0	3.24	0.59	$p = 0.383$	3.01	0.84	$p = 0.880$
<i>Smoking</i>								
Yes	175	21.3	3.32	0.48	$t = 1.487$	3.02	0.81	$t = 0.402$
No	645	78.7	3.24	0.58	$p = 0.137$	3.00	0.81	$p = 0.688$
<i>Regular exercise</i>								
Yes	62	7.6	3.25	0.65	$t = 0.124$	2.91	0.74	$t = 0.972$
No	758	92.4	3.26	0.55	$p = 0.901$	3.01	0.81	$p = 0.331$

t = Independent groups t-test, F = one-way ANOVA, SD = standard deviation.

^a Groups with significant differences as a result of Bonferroni correction.

* $p < 0.05$.

** $p < 0.001$.

Table 2
Distribution of nurses' professional characteristics and comparison of PJSS and WAFCS score averages according to professional characteristics.

Professional characteristics	n	%	Perceived Job Stress Scale		Test and p value	Work-Family Life Conflict Scale		Test and p value
			Mean	SD		Mean	SD	
<i>Love of the profession</i>								
Yes	609	74.3	3.17	0.54	t = 7.600 p = 0.000**	2.88	0.78	t = 7.527 p = 0.000**
No	211	25.7	3.51	0.53		3.35	0.79	
<i>Type of working</i>								
Usually during the day ¹	168	20.5	3.23	0.53	F = 2.001 p = 0.136	2.82	0.78	F = 7.855 p = 0.000**
Usually at night ²	80	9.8	3.16	0.55		2.86	0.85	
Day-night rotation ³	572	69.8	3.28	0.57		3.08	0.80	
<i>Average working time per shift</i>								
8–10 h	393	47.9	3.24	0.54	F = 0.499 p = 0.683	2.97	0.80	F = 0.983 p = 0.400
11–16 h	314	38.3	3.27	0.54		3.01	0.78	
17–24 h	40	4.9	3.29	0.53		3.11	0.94	
Other	73	8.9	3.32	0.73		3.12	0.89	
<i>Working unit</i>								
Clinic ¹	359	43.8	3.22	0.57	KW = 13.546 p = 0.035* 2–4, 6, 7 ^b 3–4, 6, 7 ^b	2.99	0.85	KW = 35.646 p = 0.000** 2–4, 6, 7 ^b 3–4, 6, 7 ^b
Intensive care ²	271	33.0	3.32	0.49		3.09	0.67	
Emergency ³	110	13.4	3.33	0.54		3.17	0.94	
Operating room ⁴	8	1.0	3.22	0.46		2.17	0.75	
Management ⁵	12	1.5	2.96	0.67		2.68	0.67	
Outpatient clinic ⁶	30	3.7	3.13	0.75		2.55	0.70	
Other ⁷	30	3.7	3.19	0.73		2.60	0.73	
<i>Average number of patients cared for daily</i>								
I do not provide care for patients ¹	47	5.7	3.02	0.63	F = 2.269 p = 0.035* 1-4 ^a	2.42	0.74	F = 8.292 p = 0.000** 1–2, 4, 5, 6, 7 ^a 2-3 ^a 3–4, 6, 7 ^a
1-5 patients ²	294	35.9	3.19	0.51		2.76	0.68	
6–10 patients ³	129	15.7	3.28	0.57		3.08	0.84	
11–15 patients ⁴	117	14.3	3.33	0.56		3.14	0.84	
16–20 patients ⁵	93	11.3	3.28	0.60		3.00	0.88	
20–25 patients ⁶	34	4.1	3.36	0.47		3.29	0.68	
26 patients and above ⁷	106	12.9	3.27	0.62		3.10	0.91	
<i>Participation in any activity related to stress management</i>								
Yes	112	13.7	3.22	0.59	t = 0.843 p = 0.399	2.85	0.77	t = 2.114 p = 0.035*
No	708	86.3	3.27	0.56		3.03	0.81	

t = Independent samples t-tests, F = One-way ANOVA, KW = Kruskal-Wallis test.
SD = standard deviation.

^a Groups with significant differences as a result of Bonferroni correction.

^b Groups with significant differences as a result of Mann-Whitney U test.

* p < 0.05.

** p < 0.001.

Table 3
Results of regression analysis of the relationship between job stress levels and some descriptive and professional characteristics of the nurses.

	B	Std. error	β	t	p
Age	-0.112	0.028	-0.184	-4.039	0.000**
People stayed together	-0.070	0.028	-0.153	-2.539	0.011*
Having children	0.180	0.076	0.134	2.365	0.018*
Love of the profession	0.325	0.044	0.251	7.400	0.000**

R = 0.353; adjusted R² = 0.105; Durbin-Watson = 1.821; VIF < 4; F = 6.321; p = 0.000.

* p < 0.05.

** p < 0.001.

A statistically significant, moderate and positive relationship was found between the PJSS and WAFCS scores of the nurses included in the study (p < 0.001, Table 6).

As shown in Table 7, the nurses' work stress positively affected their work-family conflict levels, the effect value was 28 %, and the resulting model was statistically significant (p < 0.001).

Table 4
Results of regression analysis of the relationship between work-family conflict levels and some descriptive and professional characteristics of the nurses.

	B	Std. error	β	t	p
Age	-0.172	0.039	-0.197	-4.383	0.000**
Marital status	-0.234	0.105	-0.139	-2.225	0.026*
Working unit	-0.064	0.023	-0.117	-2.805	0.005*
Love of the profession	0.432	0.062	0.232	6.938	0.000**
Average number of patients cared	0.051	0.015	0.114	3.360	0.001**
Type of working	0.135	0.045	0.135	2.971	0.003*

R = 0.385; Adjusted R² = 0.129; Durbin-Watson = 1.971; VIF < 4; F = 7.731; p = 0.000.

* p < 0.05.

** p < 0.001.

Discussion

The findings of the study, which was conducted to investigate the effect of work stress experienced by nurses on their family life during the COVID-19 pandemic, and to identify the factors contributing to work

Table 5
Min-Max scores and average total scores for nurses based on the scales.

Scales	Min-max scores of the scale	Min-max scores taken	Mean	Std. deviation
Perceived Job Stress Scale	1–5	1.67–5	3.26	0.56
Work-Family Life Conflict Scale	1–5	1–5	3.00	0.81

Table 6
Relationship between the average Perceived Job Stress Scale and Work-Family Life Conflict Scale scores.

Scales	Work-Family Life Conflict Scale	
Perceived Job Stress Scale	r	0.537
	p	0.000**

r = Pearson correlation.

** Correlation is significant at the 0.001 level (2-tailed).

Table 7
Results of the regression analysis on the impact of work stress on work-family life conflict.

	B	Std. error	β	t	p
Work-Family Life Conflict Scale	0.773	0.042	0.537	18.205	0.000*

R = 0.537 R² = 0.288 F = 331.434 p = 0.000.

* p < 0.001.

stress and work-family conflict, are discussed based on the relevant literature below. Perceived work stress and work-family conflict levels of the nurses included in the study were affected by their age. Those in the 20–30 age group had significantly higher work stress and work-family conflict levels than those in other age groups (p < 0.001). In the study that was conducted by Yildirimalp et al. (2014) it was determined that nurses in the 33–40 age group experienced a higher level of work-family conflict when compared to the 18–25 and 26–32 age group, and nurses who were aged 41 and over compared to the nurses in the 26–32 age group. In the study conducted by Mjoli et al. (2013) it was revealed that there is a significant difference between age and work/family conflict.

In a study by Patan (2019), the relationship between the age variable and work-family conflict levels was investigated. The study reported that nurses in the 20–25 age group experienced more work-family conflict than nurses in other age groups. Consistent with the literature, the findings of this study suggested that the relief felt by older nurses due to professional experience and pending retirement resulted in lower average work stress and work-family conflict scores compared to other age groups.

This study found that family type affected the nurses' levels of work-family conflict and that nurses living in an extended family had higher levels of work-family conflict (p < 0.05). In particular, when women who play essential roles in the family must share their roles in the family with other family members due to work and lack of time in their lives, disagreements about sharing those roles may lead to an imbalance and conflict between work and family life (Charkhabi et al., 2016; Sharma et al., 2016). In this regard, individuals who cannot balance between work life and non-work life and cannot fulfill their family roles experience work-family conflict.

The people that the nurses lived with affected their work stress levels, and the level of work stress of nurses living with a roommate was significantly higher than the nurses living alone or living with their parents (p < 0.001). The family can support the person to perform their responsibilities such as housework, or this responsibility can be

performed entirely by other family members, or if the person lives alone, it may be at the initiative of the person to perform these responsibilities. However, people living with their friends may have to do their part in fulfilling their duties and responsibilities at home, and they may have conflicts with their friends when they cannot fulfill these responsibilities because of their intense working schedule. This may cause an increase in the person's perceived job stress levels. In this context, it supports this interpretation in the study that was conducted that the professional roles/responsibilities of people and the roles/responsibilities they undertake in their lives outside of working life can affect work stress.

The nurses' love of the profession affected their perceived work stress and their level of work-family conflict. It has been determined that the levels of work stress and work-family conflict were higher in nurses who did not like their profession (p < 0.001). Nursing is a stressful job that requires intense commitment and is difficult to perform without love and dedication. The quality of nursing care is related directly to the working conditions of nurses. It will be difficult for nurses to work in poor working conditions without loving their profession, it will increase their workload and bring work stress. Conflict will be inevitable if work stress permeates the family life of people who perform their work without love. In a study conducted by Cankaya (2020), he found that most of the nurses were dissatisfied with their profession due to inadequate wages, ill-defined duties and responsibilities, excessive risk, performing off-duty work, etc. This also indicates that there may be many reasons for loving the profession. During the pandemic, the stress of performing professional duties under challenging conditions may have caused some nurses to become dissatisfied with their profession.

This study found that the manner of work required of nurses increased work-family conflict; nurses who worked day and night shifts alternately had higher levels of work-family conflict (p < 0.001). Considering that most of the nurses involved in the study were female, the day and night shift manner of their work schedule caused many to experience work-family/family-work conflicts with the traditional maternal roles of women in the family and household.

One of the factors affecting work stress and work-family conflict is the unit where nurses work. Nurses working in intensive care units (ICU) and emergency rooms had higher levels of work stress and work-family conflict (p < 0.05). ICUs and emergency rooms are areas where mortality and morbidity rates are higher than other units. They are characterized by complex and technological biomedical devices where unique treatment methods are employed, vital indicators are monitored continuously and may require basic and advanced life support at any time (Aktas & Gurkan, 2015). The problems experienced by nurses, especially in ICUs and emergency rooms, can be negatively reflected in family life. This can lead to work stress, as well as work-family life conflict.

The average daily number of patients to whom the nurses provided care affected their work stress and work-family conflict levels. Work stress and work-family conflict levels increased significantly as the number of patients increased (p < 0.05). The average number of COVID-19 cases nationwide in Turkey was about 10.000 per day during the study period (the average daily number of cases on December 25, 2020: 17.543 the daily number of patients on February 10, 2021: 8.642). In other words, the study period included the peak of the pandemic throughout Turkey, and the number and intensity of patients cared for by nurses during that period were high. The levels of work stress were high due to the excessive workload of nurses working in units with high numbers of patients; the result was more elevated levels of work-family conflict. When the literature is examined, it is stated that nurses had to make changes in their family processes due to the fear of infecting their family members with the Covid-19 virus when they returned home. Examples of these changes included staying away from family and relatives, going home late, and entrusting their children to family elders (Adams & Walls, 2020; Yuncu & Yilan, 2020).

This study found that the nurses' participation in any stress management-related activity affected their levels of work-family

conflict, and the nurses participating in those activities had lower levels of work-family conflict ($p < 0.05$). Considering the limitations of the studies in the field, the result of the study can be interpreted as follows. The nurses who participated in stress management activities received professional support for coping with stress. Therefore, they did not reflect the stress experienced in family life, which caused them to have lower average scores on the work-family conflict scale.

The average work stress scale score of the nurses in the study was 3.26 ± 0.56 . The 3.26 points for the nurses correspond to E category (3.2–3.4), indicating that this stress level was significant, with great responsibilities, but also attractive for the individual. In some ways, it could increase productivity by challenging the individual; in other ways, it could also threaten health. Therefore, the stress levels among the nurses were at a level allowing increased productivity through a stimulating effect, but with accompanying threats to their health.

The COVID-19 pandemic significantly challenged countries' health-care systems. The fact that many patients were infected quickly with the need for intensive care revealed the importance of the concept of care, the primary purpose of nursing. Nurses serve in the role of caregiver for most patients in complicated COVID-19 cases requiring hospitalization. Nurses who spent substantial time with patients had greater responsibilities (Choi & Skrine Jeffers, 2020; Jackson et al., 2020; Smith et al., 2020). One study found that after the onset of the COVID-19 pandemic, a significant number of nurses read books on mental health, undertook therapy to strengthen coping skills, and received professional psychological support (Kang et al., 2020). According to the results of this study, nurses who worked with a focus on patient care and interacted with infected patients during the pandemic experienced levels of work-related stress threatening their health.

The WAFCS scores of the nurses in the study were above the average. The time spent at work, problems experienced, and responsibilities negatively affected the performance of nurses in other roles, resulting in a conflict environment within their families (Cai et al., 2020). Similarly, family conflicts negatively affected their responsibilities and duties at work, causing conflict with colleagues and supervisors. This problem could be solved by acknowledging that nurses have different roles and are members of different groups, allowing them to design their work and family lives accordingly. A work and family life intended to exclude children, spouses, colleagues, supervisors, or patients will result in significant conflicts (Cai et al., 2020; Jackson et al., 2020).

In this study, work stress accounted for 28 % of the increased levels of work-family conflict ($p < 0.001$). It can also be stated that the levels of conflict in work and family life increased as the stress levels experienced by nurses during the epidemic increased. Nursing, a profession with a high workload and work stress in the healthcare system, also contains many negative factors in occupational health.

With COVID-19, nurses began to have difficulty balancing their family and work roles. They tried to cope with many problems such as increased working hours, excessive workload, difficult working conditions and pandemic (Tekingunduz et al., 2015). Sometimes, the events in the business environment can be reflected in family life, and sometimes in family life and relationships in business life. The emergence of both conditions can adversely affect the psychological health of the individual. These difficulties in balance create a sense of conflict. High level of work-family conflict affects nurses' physical, mental and psychological health, psychological well-being, professional life and job satisfaction, performance, work commitment, decreased professional efficiency and increased work stress (Cai et al., 2020).

Conclusions

The present study concluded that the work stress levels of nurses in the study during the pandemic increased their productivity through a stimulating effect. However, the work stress levels of nurses also threatened their health and caused work-family conflicts. It was determined that as work stress increased, the level of work-family conflict

also increased. Many descriptive and professional characteristics affected nurses' health and well-being. Factors affecting work and family stress of nurses included age, number of children, family type, number of people in the home, attitude about their profession, working conditions, the type of work unit, and the average number of patients cared for daily. Nurses may be advised to use relaxation methods such as yoga and meditation to manage and cope with stress properly. In addition, it is recommended that managers make improvements in the working environment and working conditions in line with the factors that cause work stress of nurses, and qualitative research should be conducted to determine the process by which the workplace stress effected family life.

Limitations

The results of this study are limited to the opinions of the nurses working at the selected hospital and who consented to participate in this study. The conclusions of the study can thus be generalized only to these nurses.

CRedit authorship contribution statement

NK; Having an idea in the emergence and continuation of the work, Review of the literature, Writing and editing, Data collection, Checking and reviewing.

YE; Contributing to the emergence and maintenance of the study, Plan, design or pattern, Data collection.

ASÇ; Data collection or processing of the collected data for analysis, Data analysis or interpretation of the analysis, Interpretation of the analysis, Writing and editing, Revision, inspection, review, Checking and reviewing.

Conflict of interest

The authors declared that there are no conflicts of interest.

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