Predictors of Professional Quality of Life, Stress anc Coping Styles Among Frontline Nurses During COVID-19: A Cross-Sectional Study

COVID-19 Sırasında Ön Cephedeki Hemşirelerde Profesyonel Yaşam Kalitesi, Stres ve Başa Çıkma Tarzlarının Yordayıcıları: Kesitsel Bir Çalışma

This study was presented as an oral presentation at the VI International X. National Psychiatric Nursing Congress (online congress, Izmir, October 20-23, 2021.

Tuğba PEHLİVAN SARIBUDAK[1]* , **Zehra AYDIN[2]**

[1] Istanbul Arel University, Faculty of Health Sciences, Nursing Department, Psychiatric Nursing, Istanbul, Türkiye.
[2] Independent Researcher, Istanbul, Türkiye.

Abstract

COVID-19 may cause traumatic experiences and create stressful work environments for nurses, adversely affecting their psychosocial status. This study analyzes the professional quality of life, perceived stress levels, and coping styles of frontline nurses during the COVID-19 pandemic. Web-based survey using a descriptive cross-sectional design and a convenience sampling were used to select 244 nurses working with COVID-19 patients in inpatient, emergency, or intensive care units in Istanbul, Turkey. All participants completed a research questionnaire via Google Forms between August 7 and December 25, 2020. Multiple stepwise linear regression was used to analyze data. Participants experienced moderate levels of burnout, compassion satisfaction and stress, and high levels of compassion fatigue. They mostly used the self-confident approach coping style. Lack of training on the use of personal protective equipment, inadequate social support and the demands of emergency unit work were associated with compassion fatigue, burnout, and decreased level of compassion satisfaction. Organizational support was a predictor of seeking social support coping style and perceived stress was a predictor of a submissive and helpless coping style. This study demonstrates that interventions and coping programs are needed to improve frontline nurses' ability to cope with stress.

Keywords: Burnout, compassion fatigue, COVID-19, nurses

Özet

COVID-19, travmatik deneyimlere neden olabilir ve hemşireler için stresli çalışma ortamları oluşturarak psikososyal durumlarını olumsuz etkileyebilir. Bu çalışma, COVID-19 salgını sırasında ön saflardaki hemşirelerin profesyonel yaşam kalitesini, algılanan stres düzeylerini ve başa çıkma tarzlarını analiz etmektedir. Tanımlayıcı kesitsel tasarım kullanılarak web tabanlı anket yürütülmüştür. Türkiye, İstanbul'da yatan hasta, acil veya yoğun bakım ünitelerinde COVID-19 hastalarıyla çalışkan kolay örnekleme ile 244 hemşire seçilmiştir. Tüm katılımcılar 7 Ağustos ve 25 Aralık 2020 tarihleri arasında Google Formlar aracılığıyla araştırma anketlerini doldurmuştur. Verileri analiz etmek için çoklu adımlı doğrusal regresyon kullanılmıştır. Katılımcıların orta düzeyde tükenmişlik, merhamet memnuniyeti ve stres, yüksek düzeyde merhamet yorgunluğu yaşadıkları ve çoğunlukla kendine güvenli yaklaşım başa çıkma tarzını kullandıkları saptanmıştır. Kişisel koruyucu ekipman kullanımı konusunda eğitim eksikliği, yetersiz sosyal destek ve acil servis hizmeti talepleri merhamet yorgunluğu, tükenmişlik ve merhamet memnuniyetinin azalması ile ilişkili bulunmuştur. Organizasyonel destek, sosyal desteğe başvurma başa çıkma tarzının; algılanan stres, boyun eğici ve çaresiz yaklaşım başa çıkma tarzının bir yordayıcısı olarak bulunmuştur. Bu çalışma, ön saflardaki hemşirelerin stresle başa çıkma becerilerini geliştirmek için müdahalelere ve başa çıkma programlarına ihtiyaç olduğunu göstermektedir.

Anahtar Kelimeler: COVID-19, hemşireler, merhamet yorgunluğu, tükenmişlik

1. Introduction

The World Health Organization (WHO) classified the coronavirus outbreak (COVID-19 or 2019-nCOV) as a pandemic on March 11, 2020. The severity of the illness and its high fatality rates cause social distress, hospitalization, and specific care requirements, which can occasionally exceed the capacity of medical institutions and staff (Li et al., 2020). Health care workers are heavily burdened by this.

Nurses on the frontlines fighting the pandemic perform their duties with dedication and compassion, risking their lives to fulfill their responsibilities (Xiang et al., 2020). In this unprecedented situation, they suffer distress and uncertainty relating to their patients' fear of COVID's symptoms and the lack of treatment for the disease and deaths from the disease (Brooks et al., 2020). They also fear infection for themselves and their relatives. This challenging process leads to compassion fatigue, stress, and burnout, and it negatively affects professional quality of life.

In the context of this crisis, stressors that already exist in the nursing profession have intensified, as has burnout (Lai et al., 2020). Factors such as extended work hours, excessive workload and dangerous work environments push healthcare workers toward excessive energy expenditure, and increased stress levels, and burnout follows. In addition, it is necessary to know the stress level of clinical nurses in this sensitive period. The literature reports that although burnout and compassion fatigue are high among all healthcare professionals, personnel working in emergency medicine or intensive care departments seeing higher mortality rates and more traumatized patients due to COVID-19 experience higher levels of burnout and compassion fatigue (Wallace et al., 2020). Compassion fatigue (CF), consisting of secondary traumatic stress and burnout, is an adverse effect of helping individuals who have experienced traumatic events or who suffer from pain (Yu et al., 2016). Burnout and secondary traumatic stress both have similar symptomatology and are frequently observed simultaneously, despite the fact that burnout is related to the work environment and pressures, and secondary traumatic stress is related to direct exposure to traumatic situations (Stamm, 2005). According to a study done on nurses who worked during the COVID-19 epidemic, the majority of them reported high levels of CF, as well as medium to high levels of burnout and compassion satisfaction (CS) (Ruiz Fernandez et al., 2020). Professionals caring for COVID-19 patients have greater levels of CF, burnout, and felt stress, according to Lai et al. (2020). In a different study, professionals that work with COVID-19 patients had statistically significantly higher levels of stress, burnout, and secondary trauma (Trumello et al., 2020). Studies have reported burnout incidences among nurses during the COVID-19 period ranging from 35% to 80% (Guixia and Hui, 2020).

The psychosocial difficulties experienced by healthcare workers working with COVID-19 patients are obvious. Stressful events cause mental distress and physical symptoms. A professional's quality of life

may be enhanced by using effective coping mechanisms to lessen the effects of COVID-19 panic and work-related stress on their physical and mental health. There is little information on how nurses cope with COVID-19 as a personal stressor; and studies in the literature recommend multicenter research accounting for cultural and contextual differences and different periods of the pandemic to provide references to clinically develop appropriate intervention measures (Köse and Murat, 2022; Guixia and Hui, 2020). Given the gaps in the literature, this study examines the professional quality of life (CF, burnout, CS), stress levels, and coping styles of frontline nurses during the COVID-19 pandemic.

2. Method

An online survey with a descriptive cross-sectional design was carried out. The research adhered to the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) standards (von Elm et al., 2014).

2.1. Aim of the Research

This study examined the levels of frontline nurses' professional quality of life (CF, burnout, and CS), perceived stress (PS), and styles of coping with stress during the COVID-19 pandemic.

2.2. Setting and Participants

A total of 250 nurses in Istanbul, Turkey, were selected using convenience sampling. Nurses working in inpatient, emergency, or intensive care unit services and caring for patients with COVID-19 comprised the study sample. The G*Power 3.1.9.7 was used to determine the sample size (Faul et al., 2009). The calculation was based on a moderate correlation value of 0.30, and the required sample size for correlation analysis was calculated as 93 with a 5% margin of error (a = 0.05), h0 correlation value of 0 and 80% power (1- 1-β = 0.80). Since it was a descriptive and cross-sectional study, we aimed to increase the sample size to 200 or more. All participants completed research questionnaires via Google Forms between August 7 and December 25, 2020. A total of 244 individuals were determined eligible and included in the study after submitting the completed Personal Information Form and/or the Professional Quality of Life (ProQOL), Perceived Stress and Coping Stress Style scales. Participants were included on the basis of their working directly with COVID-19 patients at hospitals' inpatient, emergency, or intensive care units; exclusion criteria included not providing direct patient care, and not caring for patients diagnosed with COVID-19.

2.3. Data Collection

Data was collected between August 7 and December 25, 2020. The researchers created an online research questionnaire via Google Forms. This questionnaire included information about the researchers and the study. It also offered participants a way to provide informed consent and guaranteed the confidentiality and anonymity of the data gathered. Once the researchers accessed the online questionnaire, they shared the survey via email and messaging apps (e.g., WhatsApp). Study participants were encouraged to invite coworkers to participate in the research. Thus, the sampling technique used for the study was mixed/snowball sampling.

2.4. Data Collection Tools

A total of 4 questionnaires were provided to participants.

Personal Information Form was modeled on the literature and included 22 questions about sociodemographic characteristics; occupational and working conditions; and experiences working with COVID-19 patients (Li et al., 2022; Babore et al., 2020, Ruiz Fernandez et al., 2020). (See Table 1).

The Professional Quality of Life Scale-IV (ProQOL-IV), was created by Stamm (2005) and translated into Turkish by Yeşil et al (2010). It consists of 30 self-reported items and three subscales: CF, CS, and burnout (BO). Each subscale is evaluated separately. In the Turkish adaptation, the Cronbach's alpha coefficients were found to be 0.83 (CF), 0.62 (BO), and 0.81 (CS). 22 Questions are rated on a 5-point Likert scale from 1=Never to 5=Very Often. CF is a result of one's repeated exposure to traumatic occurrences while at work. For the CF subscale (10 items), a score over 17 indicates high CF, whereas a score under 8 indicates low CF. The subscale for measuring BO captures the sense of helplessness and fatigue brought on by the challenges of managing difficulties at work. For the BO subscale (10 items), a score over 27 indicates high BO, with a score under 18 indicating low burnout. CS is the sense of satisfaction and fulfillment an employee experiences after assisting a person in need in a situation that is relevant to their line of work or profession. For the CS subscale (10 items), a score above 42 indicates high CS, with a score less than 33 indicating low levels of CS (Stamm, 2005; Yeşil et al., 2010).

The Perceived Stress Scale was created by Cohen et al. (1983), and Eskin et al. (2013) translated it into Turkish. The Cronbach's alpha coefficient was 0.82 for the Turkish version of the tool. The scale assesses the degree to which people feel their lives have become chaotic, got out of their control, and they have been overwhelmed over the previous month. This 10-item tool is rated on a 5-point Likert scale with 0=Never to 4=Very often. High scores indicate high levels of perceived stress (Cohen et al., 1983; Eskin et al., 2013).

Coping Stress Scale was developed by Folkman and Lazarus (1980) and adapted to Turkish by Şahin and Durak (1995). The scale has 30 components in total, five sub-factors, and a score range of 0 to 3. It measures two main ways of coping with stress: problem oriented/active style and emotion oriented/passive style. The subscales for seeking social support, optimism, and self-confidence are used to assess active styles, whereas the subscales for helplessness and submissiveness are used to test passive styles. Those who can handle stress well tend to adopt an the optimistic and the self-confident approach, while those who struggle tend to adopt a helpless and submissive approach. Each factor's scores are computed independently; the overall score is not computed. High scores suggest a propensity for the given style (Folkman & Lazarus, 1980, Şahin & Durak, 1995).

2.5. Ethical considerations

The Human Research Ethics Committee of Istinye University granted ethical approval on July 22, 2020. (No: 72). Before completing the survey, respondents provided their informed consent. The survey was anonymous, and personal information was not disclosed.

2.6. Limitations

The participants completed the questionnaires using an online form, which might have led to self-selection bias. The fact that our study was conducted at the beginning of the second wave of the pandemic, when the number of COVID cases was partially reduced, may have affected its results. Finally, the cross-sectional nature of the study could not assess changes in the respondents' CF, BO, CS, PS, and Coping Stress Style.

2.7. Data analysis

The SPSS 26.0 software program was used for data analysis. The Shapiro-Wilk test was employed before parametric statistical methods to guarantee the data's normal distribution. The mean outcome variable scores and sample characteristics were determined using descriptive statistics. Using parametric tests, group differences in the mean CF, BO, CS, PS, and coping methods were evaluated (ANOVA).

CF, BO, CS, PS, and coping styles scores were considered to be outcome variables to predict the factors. Using distribution plots, skewness and kurtosis values, and Shapiro-Wilks tests, variables were initially examined for assumptions of parametric statistical testing. Multiple stepwise linear regression analyses based on univariate analysis revealed the outcome variables. Independent variables with univariate p values under 0.20 were used in the multiple stepwise linear regression analysis (Tabachnick & Fidell, 2013/2015). Variables with $p>0.20$ were excluded from the model. Data met the assumptions of multiple linear regression analysis (multicollinearity, multivariate outliers, and multivariate normality [linear relationship, homoscedasticity, normal distribution of residuals]). To compare the models and account for all variance, adjusted R-square (R^2) was utilized. Statistical significance was defined as $p<0.05$.

3. Results

3.1. Participant characteristics

Table 1 presents a complete overview of the sample demographics.

Table 1. Characteristics of the nurses in the study (n=244)

Variables		Mean ±SD or n (%)
Age (years)		35.94±8.93
Years of professional experience		15.07±9.32
Working hours per week		46.09±9.52
Working hours per day		11.61±5.28
Number of patients provided with care per day		8.08±6.78
Gender	Female	223 (91.4)
	Male	21 (8.6)
Marital status		
	Single	88 (36.1)
	Married	156 (63.9)

Table 1. Characteristics of the nurses in the study (n=244) (continued)

Variables		Mean ±SD or n (%)
Educational status		
	Vocational high school	35 (14.3)
	Associate's degree	25 (10.2)
	Bachelor's degree	146 (59.8)
	Postgraduate	38 (15.6)
Current institution		
	University hospital	64 (26.2)
	Government hospital	106 (43.4)
	Private/University Hospital	74 (30.3)
Current department		
	COVID-19 inpatient service	84 (34.4)
	COVID-19 intensive care unit	80 (32.8)
	Emergency service	80 (32.8)
Totally working duration at COVID-19 unit (months)		
	<6	146 (59.8)
	≥ 6	98 (40.2)
Having child/children		
	Yes	141 (57.8)
	No	103 (42.2)
Living with family members		
	Yes	207 (84.8)
	No	37 (15.2)
Volunteering to work with COVID-19 patients		
	Yes	113 (46.3)
	No	131 (53.7)
The level of received organizational support		
	Adequate	66 (27.0)
	Inadequate	178 (73.0)
Equipment support		
	Adequate	136 (55.7)
	Inadequate	108 (44.3)
Training on the use of personal protective equipment		
	Yes	164 (67.2)
	No	80 (32.8)
Diagnosed with COVID-19		
	Yes	50 (20.5)
	No	194 (79.5)
Family member diagnosed with COVID-19		
	Yes	62 (25.4)
	No	182 (74.6)
Colleagues diagnosed with COVID-19		
	Yes	206 (84.4)
	No	38 (15.6)
Previous experience working with infectious patients		
	Yes	144 (59.0)
	No	100 (41.0)
Receiving psychological support		
	Yes	10 (4.1)
	No	234 (95.9)

SD= Standard deviation, Percentage (%) values in parentheses

3.2. Prevalence of CF, BO, CS, PS, and coping style subscales

The average CF, BO, CS, and PS scores were 18.49±8.29, 24.22±5.75, 33.16±9.09, and 22.06±3.88. Self-confident, optimistic, seeking social support, helpless, and submissive coping style subscale scores were 2.03±0.54, 1.77±0.55, 1.76±0.51, 1.34±0.51, and 1.05±0.44.

3.3. Multiple linear stepwise regression analyses and CF, BO, CS, and PS

Multiple regression analysis reported four predictors of CF. Lack of training on the use of personal protective equipment (β=0.181, p=0.005), working in an emergency unit rather than an inpatient COVID-19 service (β=0.136, p=0.030), inadequate social support (β=0.154, p=0.018), and lack of psychological support (β=-0.126, p=0.038) were associated with a higher degree of CF (Table 2).

Multiple regression analysis reported five predictors of BO. Inadequate social support (β=0.300, p <.001); not being trained on the use of personal protective equipment (β=0.203, p =0.001); working in an emergency unit rather than an inpatient COVID-19 service) (β=0.210, p <.001); and no previous experience working with infectious patients (β=-0.178, p=0.002) correlated to higher BO. One hour more of work per day leads to 0.11 points increase in BO mean scores (β=0.119, p=0.039) (Table 2).

The multivariate analysis reported six predictors of high CS: working in a private hospital rather than a government hospital (β=0.237, p <.001); training on the use of personal protective equipment (β=-0.154, p =0.011); working with COVID-19 patients (β=-0.183, p =0.002); working on an inpatient COVID-19 service rather than working in an emergency unit (β=-0.252, p <.001) or ICU (β=-0.173, p=0.008); no colleagues diagnosed with COVID-19 (β=0.174, p=0.004); and adequate social support (β=-0.122, p=0.039) (Table 2).

Multiple regression analysis reported three predictors of PS. The multivariate analysis showed that for every unit age decreases, PS mean scores increase by 0.64 points (β=-0.646, p=0.002); for every unit years of professional experience increase, PS mean scores increase by 0.50 points (β=0.050, p=0.015); and for every unit patients provided with care per day increase, PS mean scores increase by 0.13 points (β=0.132, p=0.038) (Table 2).

3.4. Multiple linear stepwise regression analyses with optimistic coping style

Multiple regression analysis reported two predictors of optimistic coping style. Having an associate's degree (compared to a bachelor's degree) (β=0.206, p=0.001) and being diagnosed with COVID-19 (β=0.146, p=0.021) were associated with lower optimistic coping style scores (Table 2).

3.5. Multiple linear stepwise regression analyses with seeking social support coping style

Multiple regression analysis reported one predictor for the seeking social support coping style. An adequate social support (β=-0.175, p=0.006) correlated with a higher degree of seeking social support coping style (Table 2).

3.6. Multiple linear stepwise regression analyses with helpless coping style

Multiple regression analysis reported two predictors of helpless coping style. The presence of children (β=-0.169, p =0.008) was associated with a higher degree of helpless coping style scores. One unit increase in perceived stress scores results in 0.15 points decrease in helpless coping style mean scores (β=-0.154, p=0.015) (Table 2).

3.7. Multiple linear stepwise regression analyses with submissive coping style

Multiple regression analysis reported three predictors of submissive coping style. Lack of equipment support (β=-0.170, p =0.007) correlated with lower submissive coping style. One extra hour of work per day results in 0.16 points increase in submissive coping style mean scores (β=0.168, p=0.007). In addition, a one-unit increase in perceived stress scores leads to 0.14 units decrease in submissive coping style mean scores (β=-0.145, p=0.021) (Table 2).

Table 2. Multiple linear stepwise regression analyses with CF, BO, CS, PS and coping style subscales

Variables	B	SE	β	t	p-value	R	R²	Adjusted R²
CF						.387	.150	.132
Intercept	18.480	2.694		6.859	**<.001**			
Training on the use of personal protective equipment	3.193	1.116	.181	2.861	**.005**			
Number of patients provided with care per day	.139	.078	.114	1.798	.073			
The level of received social support	2.861	1.197	.154	2.390	**.018**			
Current department (Emergency)	1.201	.552	.136	2.178	**.030**			
Number of nurses receiving psychological support	-5.248	2.513	-.126	-2.088	**.038**			
BO						.507	.257	.241
Intercept	19.034	.935		20.354	**<.001**			
The level of received social support	3.887	.774	.300	5.022	**<.001**			
Training on the use of personal protective equipment	2.471	.724	.203	3.413	**.001**			
Current department (Emergency)	1.287	.352	.210	3.653	**<.001**			
Previous experience working with infectious patient	-2.069	.673	-.178	-3.076	**.002**			
Working hours per day	.129	.062	.119	2.077	**.039**			
CS						.525	.276	.254
Intercept	33753	1.982		17.029	**<.001**			
Current institution (Private)	4.641	1.164	.237	3.989	**<.001**			
Training on the use of personal protective equipment	-2.953	1.150	-.154	-2.567	**.011**			
Volunteering to work with COVID-19 patients	-3.311	1.063	-.183	-3.115	**.002**			
Current department (Emergency)	-2.426	.636	-.252	-3.812	**<.001**			
Colleagues diagnosed with COVID-19	4.365	1.484	.174	2.942	**.004**			
Current department (ICU)	-3.306	1.229	-.173	-2.689	**.008**			
The level of received organizational support	-2.491	1.198	-.122	-2.079	**.039**			
PS						.259	.067	.055
Intercept	28.406	2.030		13.993	**<.001**			
Age	-.281	.088	-.646	-3.187	**.002**			
Years of professional experience	.208	.085	.500	2.462	**.015**			
Number of patients provided with care per day	.076	.036	.132	2.090	**.038**			

Table 2. Multiple linear stepwise regression analyses with CF, BO, CS, PS and coping style subscales (continued)

Variables	B	SE	β	t	p-value	R	R^2	Adjusted R^2
Optimistic coping style						.240	.057	.050
Intercept	.908	.236		3.846	**<.001**			
Educational status (Associate's degree)	.374	.114	.206	3.279	**.001**			
Diagnosed with COVID-19	.199	.086	.146	2.320	**.021**			
Seeking social support coping style						.175	.031	.027
Intercept	1.909	.063		30.314	**<.001**			
Organizational support received	-.204	.074	-.175	-2.767	**.006**			
Helpless coping style						.240	.057	.050
Intercept	1.872	.188		9.973	**<.001**			
Having child/children	-.178	.066	-.169	-2.679	**.008**			
Perceived stress	-.021	.008	-.154	-2.439	**.015**			
Submissive coping style						.272	.074	.063
Intercept	1.122	.210		5.355	**<.001**			
Equipment support	-.152	.056	-.170	-2.730	**.007**			
Working hours per week	.008	.003	.168	2.698	**.007**			
Perceived stress	-.017	.007	-.145	-2.327	**.021**			

Abbreviations= SD=standard deviation; SE=standard error; CF=compassion fatigue; B= burnout; CS= compassion satisfaction; PS= perceived stress; ICU= intensive care unit; COVID-19= Coronavirus infection
[†]*Bold values statistically significant*
[‡] *Reference groups= department, inpatient service; educational status, bachelor's degree; current institution, government hospital*

4. Discussion

The results of this study show that nurses had high levels of CF and moderate levels of CS, BO, and PS. According to a research of nurses who were employed during the COVID-19 epidemic, most of the sample had high levels of BO, CF, and CF, as well as medium to high levels of BO and CS (Ruiz Fernandez et al., 2020). According to Lai et al. (2020), professionals who care for patients with COVID-19 have greater CF, BO, and PS. Additionally, Trumello et al. (2020) found that professionals caring for COVID-19 patients had considerably higher levels of stress, burnout, and secondary trauma. Working on the frontlines of the COVID-19 pandemic adversely affects healthcare workers' stress, CF, BO, and CS levels regardless of location or department. Results of this study are generally consistent with the results of previous studies.

In our study, PS scores did not vary by workplace during the COVID-19 health crisis, however among professionals working in COVID-19 emergency rooms, CF and BO scores were higher and CS ratings were lower. Vagni et al. (2020) found that working with COVID-19 patients in emergency department led to significantly higher levels of stress among nurses. Many studies have shown that emergency unit healthcare workers experience increased stress and CF independently of COVID-19, but the pandemic has undoubtedly exacerbated the situation (Flarity et al., 2013). The prolonged and ongoing pandemic has increased the stress and psychological burden of healthcare workers. Our study, consistent with the existing literature, reveals that healthcare workers working in emergency departments are at psychological risk and that it is important to routinely evaluate, monitor, and intervene from a psychosocial standpoint.

In the current study, nurses without adequate training on the use of personal protective equipment showed higher CF and BO scores and lower CS scores. The literature states that lack of adequate and specific information and equipment support to healthcare personnel in the fight against COVID-19 increases their fear of contracting the disease and causes them increased emotional and physical stress (Du et al., 2020; Huang et al., 2020). In-service trainings are effective approaches to managing the psychosocial problems of employees; our study provides important guidelines for this.

In this study, nurses who have not received adequate organizational support show higher CF and BO scores and lower CS scores. Adequate PPE, adequate training, regulation of work hours and psychological support for employees should be the priorities of organizational support during the peak of the pandemic. Inadequate equipment support has led to psychosocial difficulties in healthcare professionals; lack of adequate or appropriate equipment for healthcare staff in dealing with COVID-19 has increased their fear of COVID infection and caused them emotional and physical stress. On the other hand, experts who were given the right equipment during the emergency response were more resilient (Du et al., 2020; Huang et al., 2020; Ornell et al., 2020). Our study showed the importance and priority of organizational support in such times of crisis as the pandemic.

According to our study, age and the duration of professional experience were the main variables influencing nurses' stress levels. Arpacıoğlu et al. (2020) showed fewer years in the profession correlated with high secondary traumatization; they also found those working in the profession for 20 years or more had the lowest levels of traumatization, depression, and anxiety. In contrast, our study found that stress level increases as work duration increases. Avcı et al. (2018) related professional experience to work stress, which was high among nurses who had just started their careers but began to decrease after 5 years. It appears that with experience, nurses become more capable of coping with stress and their situation management skills increase gradually. However, this prolonged pandemic period may have increased nurses' stress levels, causing increased burnout and fatigue.

Throughout the pandemic, nurses have used both positive and negative coping styles to manage their stress. The key coping techniques used by healthcare workers to deal with the pandemic's detrimental effects on their mental health are the support and communication they receive from friends, family, and coworkers. Our study found that nurses most commonly use the self-confident coping method. We found that nurses who receive adequate social support use the seeking social support coping style more often than those who do not. Yu et al. (2020) discovered that social support and an active coping style are protective factors against psychological discomfort.

The literature reports that an active coping style is protective against stress. Li et al. (2022) found lower levels of stress correlated to more frequent use of active coping strategies; however, they also found high stress levels in nurses correlated to less frequent use of helpless and submissive coping styles, which can be explained by the fact that nurses accept what they cannot change due to the prolonged burnout they have experienced during the attenuated period of the COVID-19 pandemic.

The presence of children increases stress and impairs the coping mechanisms of individuals during already difficult situations like the pandemic. Babore et al. (2020) associated the presence of children

with higher levels of pandemic distress. Children are the heart of the Turkish family; in our study of nurses in Turkey, participants explained they failed to fulfill their parenting responsibilities because they could not see their children and interact with them for long periods of time due to stressful working conditions and isolation measures during the pandemic. Fu et al. (2020) also found that education status positively impacts coping styles and Yu et al. determined that (2020) adults with less education more often adopt passive coping strategies. Our study associated an associate's degree (rather than a bachelor's degree) with less optimism; thus, our study is consistent with the literature.

4.1. Implications for practice

COVID-19 creates stressful work environments for nurses, adversely affecting their professional quality of life. Our study examined the working conditions of nurses during the pandemic crisis, analyzing the factors affecting their professional quality of life and their coping mechanisms. These are foundational to planning and implementing initiatives to protect healthcare workers exposed to COVID-19 on the frontlines. Our study demonstrates the importance of monitoring nurses during peak pandemic periods. We recommend introducing appropriate individual and institutional measures to improve nurses' professional quality of life and coping skills, including institutional psychosocial evaluation of nurses, early identification of high-risk workers, and provisional organizational support to effectively manage psychosocial outcomes. In addition, we recommend development of individual awareness and self-management among nurses to reduce compassion fatigue, burnout, and stress.

5. Conclusion

According to the study, nurses experienced significant levels of CF, as well as moderate levels of BO and PS during the COVID-19 epidemic. The study discovered that the availability of training in the usage of personal protective equipment, social support received, and work department are the most notable variables affecting nurses' professional quality of life. In our study, nurses most frequently employ the self-confident coping style, and receiving adequate social support is facilitating the use of the seeking social support coping style. Additionally, having kids around makes people more stressed and less able to cope with challenging circumstances like the pandemic. Nurses need to take responsibility for developing individual strategies to improve their coping skills and enhance their professional quality of life, but organizations need to provide the necessary support for individuals to cope with work-related difficulties. In different institutions, it is recommended to carry out further studies in different periods, such as exacerbation and reduction of pandemic with a larger sample.

Authors Contributions

Topic Selection: TPS, ZA; Design: TPS, ZA; Planning: TPS, ZA; Data collection and analysis: TPS, ZA; Writing of the article: TPS, ZA; Critical review: TPS, ZA.

Conflict of Interest

The authors have declared no conflict of interest.

Acknowledgments

References

Arpacioglu, S., Gurler, M., & Cakiroglu, S. (2020). Secondary Traumatization Outcomes and Associated Factors Among the Health Care Workers Exposed to the COVID-19. International Journal of Social Psychiatry, 1-6. https://doi.org/10.1177/002076402094074 2

Avcı, G., Öztürk, G., Azaklı, N., & Çekinmez, S. (2018). Determination of Work-Related Stress Levels of Nurses and Style of Coping with Stress. İzmir Kâtip Çelebi Üniversitesi Sağlık Bilimleri Fakültesi Dergisi, 3 (1), 1-7.

Babore, A., Lombardi, L., Viceconti, M. L., Pignataro, S., Marino, V., Crudele, M., Candelori, C., Bramanti, S. M., & Trumello, C. (2020). Psychological effects of the COVID-2019 pandemic: Perceived stress and coping strategies among healthcare professionals. Psychiatry Research, 293, 1-6. https://doi.org/10.1016/j.psychres.2020.113366

Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. The Lancet, 395, 912–920. https://doi.org/10.1016/S0140-6736(20)30460-8

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. Journal of Health and Social Behaviour, 24, 385–396. https://doi.org/10.2307/2136404

Du, J., Dong, L., Wang, T., Yuan, C., Fu, R., Zhang, L., Liu, B., Zhang, M., Yin, Y., Qin, J., Bouey, J., Zhao, M., & Li, X. (2020). Psychological symptoms among frontline healthcare workers during COVID-19 outbreak in Wuhan. General Hospital Psychiatry, 67, 144–145. https://doi.org/10.1016/j.genhosppsych.2020.03.011

Eskin, M., Harlak, H., Demirkıran, F., & Dereboy, Ç. (2013). Algılanan stres ölçeğinin Türkçe'ye uyarlanması: Güvenirlik ve geçerlik analizi. New/ Yeni Symposium Journal, 51(3), 132–140

Faul, F., Erdfleder, E., Buchner, A., & Lang, A.G. (2009). Statistical power analyses using G∗Power 3.1: Test for correlation and regression analyses. Behav. Res. Methods, 41, 1149–1160. https://doi.org/10.3758/BRM.41.4.1149

Flarity, K., Gentry, E., & Mesnikoff, N. (2013). The effectiveness of an educational program on preventing and treating compassion fatigue in emergency nurses. Advanced Emergency Nursing Journal, 35(3), 247–258. https://doi.org/10.1097/TME.0b013e31829b726f

Folkman, S., & Lazarus, R. (1980). An analysis of coping in a middle aged community sample. Journal of Health and Social Behavior, 21, 219-239.

Fu, W., Wang, C., Zou, L., Guo, Z., Lu, Z., Yan, S., & Mao, J. (2020). Psychological health, sleep quality, and coping styles to stress facing the COVID-19 in Wuhan, China. Translational Psychiatry, 10, 225. https://doi.org/10.1038/s41398-020-00913-3

Guixia, L., & Hui, Z. (2020). A study on burnout of nurses in the period of COVID-19. Psychology and Behavioral Sciences, 9 (3), 31-36. https://doi.org/10.11648/j.pbs.20200903.12

Huang, L., Xu, F. M., & Liu, H. R. (2020). Emotional responses and coping strategies of nurses and nursing college students during COVID-19 outbreak. MedRxiv. https://doi.org/10.1101/2020.03.05.20031898

Köse, S., & Murat, M. (2022). Interventional studies on nurses' mental health in the COVID-19 pandemic: A systematic review. Psych, 4, 525–536. https://doi.org/10.3390/psych4030040

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., ... & Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA network open, 3(3), e203976-e203976. https://doi.org/10.1001/jamanetworkopen.2020.3976

Li, J., Wang, L., Guo, S., Xie, N., Yao, L., Cao, Y., Day, S. W., Howard, S. C., Graff, J. C., Gu, T., Ji, J., Gu, W., & Sun, D. (2020). The Data set for Patient Information Based Algorithm to Predict Mortality Cause by COVID-19. Data in brief, 30, 105619. https://doi.org/10.1016/j.dib.2020.105619

Li, W. Q., Yuan, P., Sun, J., Xu, M. L., Wang, Q. X., Ge, D. D., Jiang, M. M., Xing, L. Q., Du, W. J., & Li, Q. (2022). Resilience, coping style, and COVID-19 stress: Effects on the quality of life in frontline health care workers. Psychology, Health & Medicine, 27(2), 312–324. https://doi.org/10.1080/13548506.2021.1905860

Ornell, F., Halpern, S. C., Kessler, F. H. P., & Narvaez, J. C. (2020). The impact of the COVID-19 pandemic on the mental health of healthcare professionals. Cad. Saúde Pública, 36. https://doi.org/10.1590/0102-311x00063520

Ruiz-Fernandez, M. D., Ramos-Pichardo, J. D., Ibanez-Masero, O., Cabrera-Troya, J., Carmona-Rega, M. I., & Ortega-Galan, A. M. (2020). Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 heakth crisis in Spain. Journal of Clinical Nursing, 29, 4321-4330. https://doi.org/10.1111/jocn.15469

Stamm, B. H. (2005). The ProQOL Manual. The Professional Quality of Life Scale: Compassion satisfaction, burnout & compassion fatigue/ secondary trauma scales. Sidran Press.

Şahin, N. H. & Durak, A. (1995). Stresle başa çıkma tarzları ölçeği: Üniversite Öğrencileri için Uyarlanması. Türk Psikoloji Dergisi, 10 (34), 56-73.

Tabachnick, B. G., & Fidell, L. S. (2015). Çok değişkenli istatistiklerin kullanımı. (Çev. Ed. Mustafa Baloğlu; 6. Basım). Ankara: Nobel Akademik Yayıncılık Eğitim Danışmanlık. (Original work published 2013)

Trumello, C., Bramanti, S., M., Ballarotto, G., Candelori, C., Cerniglia, L., Cimino, S., … Babore, A. (2020). Psychological Adjustment of Healthcare Workers in Italy during the COVID-19 Pandemic: Differences in Stress, Anxiety, Depression, Burnout, Secondary Trauma, and Compassion Satisfaction between Frontline and Non-Frontline Professionals. Int. J. Environ. Res. Public Health, 17, 8358. https://doi.org/10.3390/ijerph17228358

Vagni, M., MAiorano, T., Giostra, V., & Pajardi, D. (2020). Coping with COVID-19: Emergency stress, secondary trauma and self-efficacy in healthcare and emergency workers in Italy. Frontiers Psychology, 11. https://doi.org/10.3389/fpsyg.2020.566912

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & STROBE Initiative. (2014). The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: Guidelines for reporting observational studies. International Journal of Surgery, 12 (12), 1495-1499. https://doi.org/10.1016/j.ijsu.2014.07.013.

Wallace, C. L., Wladkowski, S. P., Gibson, A., & White, P. (2020). Grief During the COVID-19 Pandemic: Considerations for Palliative Care Providers. J Pain Symptom Management, 60 (1), 70-76. https://doi.org/10.1016/j.jpainsymman.2020.04.012

Xiang, Y. T., Yang, Y., Li, W., Zhang, L., Zhang, Q., Cheung, T., & Ng, C. H. (2020). Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. The Lancet Psychiatry, 7(3), 228–229. https://doi.org/10.1016/S2215-0366(20)30046-8

Yu, H., Li, M., Li, Z., Xiang, W., Yuan, Y., Liu, Y., Li, Z., & Xiong, Z. (2020). Coping style, social support and psychological distress in the general Chinese population in the early stages of the COVID-19 epidemic. BMC Psychiatry, 20, 426. https://doi.org/10.1186/s12888-020-02826-3

Yu, H., Jiang, A., & Shen, J. (2016). Prevalance and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: A cross-sectional survey. International Journal of Nursing Studies, 57, 28–38. https://doi.org/10.1016/j.ijnurstu.2016.01.012.

Yeşil, A., Ergün, Ü., Amasyalı, C., Er, F., Olgun, N. N., & Aker, A. T. (2010). Çalışanlar için yaşam kalitesi ölçeği Türkçe uyarlaması geçerlik ve güvenirlik çalışması. Nöropsikiyatri Arşivi, 47, 111–117. https://doi.org/10.4274/npa.5210