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Behaviours and experiences of nurses during the COVID-19 pandemic in Turkey: A mixed methods study

Zeliha Cengiz PhD, RN, Assistant Professor[1] |
Kevser Isik PhD, RN, Assistant Professor[2] |
Züleyha Gurdap RN, Research Assistant[1] |
Emriye Hilal Yayan PhD, RN, Associate Professor[3]

[1]Faculty of Nursing, Department of Fundamentals Nursing, Inonu University, Malatya, Turkey

[2]Faculty of Health Sciences, Department of Public Health of Nursing, Kahramanmaras Sutcu Imam University, Kahramanmaras, Turkey

[3]Faculty of Nursing, Department of Child Health Nursing, Inonu University, Malatya, Turkey

Correspondence
Zeliha Cengiz, Inonu University, Faculty of Nursing, Department of Fundamentals Nursing, Malatya, Turkey.
Email: zeliha.cengiz@inonu.edu.tr

Abstract

Aim: The aim of this work is to present behaviours and experiences of nurses in Turkey during the current coronavirus pandemic.

Background: The coronavirus pandemic leads to difficulties for most health care workers, especially for nurses who mostly accompany patients and are on the front line.

Methods: In the study, a parallel mixed pattern converging quantitative and qualitative research methods was used.

Results: The model revealed that 41 years old or older, diabetic, female, single professionals, working in the pandemic department took more personal measures. Five main themes appeared regarding the experiences of the nurses during the pandemic period: (1) psychological and mental strain; (2) personal protective equipment; (3) organizational, physical, and social strains; (4) change in professional values; (5) turning the crisis into an opportunity.

Conclusions: Personal measures are associated with the risk status. There is a need to protect nurses with significant measures by providing psychosocial support, meeting their basic needs, and preventing all complications likely to occur due to increasing workload.

Implications for Nursing Management: More efforts should be made to ensure good work, fair treatment, no tolerance for discrimination, and equal compensation conditions.

KEYWORDS
coronavirus, coronavirus infections, COVID-19, epidemics, nursing

1 | BACKGROUND

The treatment of COVID-19 patients is a serious matter that requires training, the right personal protective equipment, the availability of modern intensive care units, and the availability of experienced health care professionals (Misra, 2020). Even if the potential inadequacy of ventilators and intensive care beds is remedied properly to treat the patients, the abundance of materials and beds would not be useful unless there is sufficient workforce (Chen et al., 2013; Lai et al., 2020).

COVID-19 creates several negative effects on health professionals via various factors including increased patient load and risk of infection

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(Adams & Walls, 2020). More than 120,000 health care professionals (reported on 9 December 2020) in Turkey have been infected with coronavirus (Ministry of Health, 2020). The data show that health care professionals are among the risk groups affected most by the COVID-19 outbreak in the country. Nurses are undoubtedly the health-related work force mostly needed in this global crisis. During this crisis, nurses play a key role in dealing with complex cases that require hospitalization. In this period, the abundance in the number of nurses may not be sufficient alone to provide adequate nursing services. Along with a quantitatively sufficient workforce, it is also necessary to maximize the ability of each nurse in providing care to patients with high performance. Considering that fluctuations in the number of critical patients may sustain for weeks to months, it is important to enable nurses to work with full potential for a long time (Shanafelt et al., 2020).

The need for providing care for the people affected by COVID-19 has put intense pressure on nurses (González-Gil et al., 2021). Nurses providing care for the infected patients needed to isolate themselves to avoid transmitting this virus to their loved ones, and therefore, they stayed away from various support systems. During the epidemic period, nurses and other health professionals experienced burnout and compassion fatigue as a result of intense and continuous workload (Schwerdtle et al., 2020). Studies have shown that nurses experienced symptoms such as burnout, depression, anxiety, insomnia, and posttraumatic stress disorder during the epidemic process (Hacimusalar et al., 2020; Lai et al., 2020; Schwerdtle et al., 2020). In a study, it was found that nurses experienced more despair than doctors and other health professionals (Crowe et al., 2021).

It is important to provide the detailed analysis of the current and future needs of nurses to support the nursing workforce. There is a need for studies pointing out what nurses experienced during the COVID-19 pandemic in Turkey and across the world. This study sought to investigate behaviours and experiences of nurses working in Turkey during the COVID-19 pandemic. The study focused specifically on understanding the nurses' perception of their risk for transmission, personal precautions they took for COVID-19, changes in working conditions, and physical, psychological, and social changes they experienced.

2 | MATERIALS AND METHODS

2.1 | Study design and population

The present study used a convergent parallel mixed methods design, a methodological design consisting of two distinct phases. In the quantitative dimension of the study, the relationship between nurses' risk status and their personal precautionary status was examined through a structural equation model. The qualitative dimension, on the other hand, was carried out based on a descriptive phenomenological pattern, one of the qualitative research methods, to examine the personal experiences guiding nurses' behaviour during the pandemic process and the meanings they attributed to the process (Braun & Clarke, 2006). The main purpose of the phenomenological pattern is to understand the essence of an object by reducing individual experiences of a phenomenon to a universal explanation (Creswell, 2014). Although face-to-face interviews are preferred more in descriptive phenomenology, it has been reported that other methods such as written narratives, blogs, research diaries, and online interviews may also be used for data collection (Morrow et al., 2015). In addition, it has been suggested that open-ended structured interviewing via questionnaires can be used to explore topics ranging from participants' perceptions, cultural differences, and interpretations (Marshall & Rossman, 2014). Therefore, in this study, we predicted that nurses' experiences could be investigated by a self-administered (online) open-ended structured survey (Ataro, 2020). In this study, we combined the data obtained via quantitative research with the phenomenological research pattern's feature of "the inclusion of individual experiences." Thus, we integrated the data regarding nurses' behaviours during the pandemic period and their experiences that could guide these behaviours into the interpretation of the general results to provide a comprehensive view of the effects of the current pandemic on nurses (Creswell, 2015; Crowe et al., 2021). Research questions in this context are as follows:

1. How do nurses assess their own risk situations?
2. What is the status of nurses regarding taking personal precautions against COVID-19 and complying with social distance rules?
3. How did COVID-19 affect nurses' work environments, social lives, and physical and psychological conditions?

2.2 | Sampling and recruitment

The research was carried out between 10 April and 15 June 2020 in nurses with internet access from seven geographical regions of Turkey. At the time of study, there were about 205,000 registered nurses in Turkey. Based on the sample size calculation performed via power analysis, a minimum of 1070 responses were targeted (Lai et al., 2020). Nurses participated in the research were reached through the snowball sampling method. Information about the study and an electronic link for the questionnaire were distributed on the social media through a professional organization, the Turkish Nurses Association. The survey was conducted at the peak of the pandemic in Turkey. This short time frame was chosen to capture a snapshot of the condition and also to gain insight into emerging policies and practices. Nurses working actively during the data collection period were included in the study. Nurses who were on leave or quit their profession at the time of the study were excluded from the study. As a result, a total of 1306 questionnaires were filled out by the nurses.

2.3 | Questionnaire and measurement

For the research, a self-report structured questionnaire was developed by the researchers. After a comprehensive literature review on

the subject, 5-point Likert-type questions were prepared regarding the nurses' personal measures, risk status, and compliance with social distance rules with regard to COVID-19. A pilot study was performed by taking the opinions of 11 nurses regarding the questions prepared. Validity and reliability analyses were performed for the Likert part of the questionnaire. Also, open-ended questions were included in the questionnaire. The questionnaire consisting of 41 questions were divided into four sections:

1. The sociodemographic characteristics section consists of questions regarding age, gender, marital status, tenure in the profession, and the work unit.
2. The risk evaluation regarding the pandemic section consists of questions regarding work status at the COVID-19 department, the evaluation of their concerns about the possibility of being a COVID-19 patient or carrier, presence of a chronic disease, and smoking status.
3. The personal measures and social distance section are about the behaviours related to COVID-19 and it consists of questions regarding information acquisition behaviours, monitoring the symptoms of COVID-19 (fever and respiratory problems), compliance with quarantine conditions and social distancing, hygiene, and hand-washing, the use of personal protective equipment (PPE), sleeping, taking isolation measures, and compliance with the measures.
4. The experiences during the COVID-19 period section consists of open-ended questions regarding how the pandemic affects work and social life, what the difficulties and psychological strains are, and what is needed.

2.4 | Data collection and analysis

Due to curfew restrictions, risky hospital environments, restrictions of entry into hospitals, and because the distribution of questionnaires personally may pose a risk of contamination, face-to-face interviews were avoided. Therefore, the surveys were delivered during the peak of COVID-19 to the participants online by nurses with a doctorate or a master's degree. The questionnaire was presented as a Google form. The participants were invited through personal e-mail messages. The data were collected between 5 May and 1 June 2020. Duplicate entries were prevented by allowing one submission for each participant's Google account.

In the study, reliability analysis and multicollinearity analysis were performed with the SPSS 25 statistical program. Afterwards, a structural equation model was established with the AMOS 24 software to assess the effects of the measures taken by the nurses against the risk of COVID-19 in relation with the variables, and a multiple group analysis was conducted. The significance level was accepted as $p < .05$.

In the reliability analysis of the questionnaire used in the study, we calculated two values: composite reliability (CR) and average variance extracted (AVE). The CR value analysis shows the extent to which a hidden variable is represented by the observed variables that constitute itself. The obtained CR values are generally parallel with the calculated Cronbach α values. CR results must be .70 or above. The AVE value should be greater than the unexplained variance and also over .50. Any Cronbach alpha (α) value of .90–1.00 expresses perfect reliability. The Cronbach alpha (α) value of the questionnaire we used was calculated as .969, the AVE value as .984, and the CR value as .953, so it is seen that the questionnaire was reliable. Multicollinearity was checked in the data to make sure that there was no relationship between the independent variables, and the calculated variance inflation factor value was not over 10 (2.225) (Albayrak, 2005).

Thematic analysis was carried out for the open-ended questions, which revealed the nurses' experience in the COVID-19 period comprehensively. All the responses were entered into Microsoft Excel (version 2010) and analysed by all the researchers. An induction approach was used to create the code system for the analysis. First, the participants who answered the open-ended questions in detail were identified. It was observed that most of the participants answered the open-ended research questions with only a few words or in short sentences. These short answers did not contain any experience or examples. Therefore, we could not include them in the qualitative part of the study. Fifty-two nurses who explained their pandemic experiences in detail wrote an average of half a page to two pages of text. These answers were transferred from the Excel program after assigning a unique participant number to the NVivo program. A large number of participants' responses did not seem appropriate for the qualitative study design, so responses of 52 participants who gave detailed answers only to open-ended questions were analysed. After 35 questionnaires (67.30%) were analysed, the data reached saturation and the concepts started to repeat. An inductive thematic saturation model was used in the study and a summative content analysis was performed. This model focuses on defining new codes or themes. In the model, saturation appears to be confined to the level of analysis, and its implication for data collection is at best implicit. As a result, the thematic analysis process, based on a descriptive phenomenological approach, extended to identifying meanings using the original data, organizing them into patterns, and writing the resulting themes related to the aim of the study and the real context. When the findings were reported, they were explained in reverse (i.e., starting with the themes and the descriptive text, illustrated with quotes). Thus, the meanings obtained from the experiences of the participants were explained in a meaningful text organized in themes (Sundler et al., 2019).

2.5 | Ethical considerations

Before the initiation of the research, approval was obtained from the local ethics committee and the Ministry of Health. Before the implementation of the survey, information about the study was shared with each participant in written. The online data collection system was configured in a way that the participants were allowed to respond to the questionnaire after they were informed about the study.

3 | RESULTS

3.1 | Description of sample

For the quantitative phase, a total of 1270 questionnaires were analysed after 34 questionnaires were removed because they were incomplete (25 questionnaires) or filled out by nurses who did not meet the inclusion criteria (nine questionnaires). Participants were mostly female ($n = 988$; 78.6%), young people aged 30 years and under ($n = 897$; 40.1%), single ($n = 777$; 61.1%), working in intensive care units ($n = 305$; 24.0%), and with a tenure of less than 5 years ($n = 781$; 61.5%). The demographics analysed in the first part of the questionnaire are presented in Table 2. For the qualitative phase, 1306 questionnaires were reviewed and 52 of them were transferred from the Excel program to NVivo. Fifteen male and 37 female participants were included in the qualitative analysis. More than half of the sample ($n = 30$) stated that they were working in pandemic services (services where patients with COVID-19 were treated) for a long or short term. Again, the same participants ($n = 30$) reported that they were still staying in a dormitory or hotel away from their home. With these characteristics, the participants who completed the questionnaires represented demographic variability and a wide range of experiences.

3.2 | Quantitative results

The participants' effort level to comply with the rules of personal protective equipment (PPE) was very high (over 84.0% "agree/

TABLE 1 Risk status and behaviours related to personal precautions in nurses

Item	*Absolutely I agree* *N*(%)	*I agree* *N*(%)	*Undecided* *N*(%)	*I do not agree* *N*(%)	*I strongly disagree* *N*(%)
1. I'm likely to be a Covid-19 carrier	229(18.0)	364(28.7)	303(23.9)	256(20.2)	118(9.3)
2. I'm likely to have coronavirus	171(13.5)	323(25.4)	324(25.5)	308(24.3)	144(11.3)
3. I follow up updated information from official sources	550(43.3)	522(41.1)	54(84.3)	58(4.6)	86(6.8)
4. I observe myself in terms of fever and respiratory symptoms	653(51.4)	478(37.6)	17(1.3)	34(2.7)	88(6.9)
5. I eat enough and balanced	496(39.1)	545(42.9)	94(7.4)	50(3.9)	85(6.7)
6. I comply with the quarantine conditions	577(45.4)	503(39.6)	51(4.0)	46(3.6)	93(7.3)
7. I pay attention to social distance in the workplace	427(33.6)	535(42.1)	138(10.9)	77(6.1)	93(7.3)
8. I regularly ventilate my environment	573(45.1)	478(37.6)	64(5.0)	60(4.7)	95(7.5)
9. I pay attention to hygiene rules, especially hand hygiene	756(59.5)	378(29.8)	16(1.3)	34(2.7)	86(6.8)
10. I pay attention to the waste disposal rules	681(53.6)	431(33.9)	38(3.0)	34(2.7)	86(6.8)
11. I keep work clothes and protective equipment separate from other clothes	666(52.4)	423(33.3)	53(4.2)	42(3.3)	86(6.8)
12. I disinfect materials like stethoscope, phone, watch, keyboard	621(48.9)	475(37.4)	47(3.7)	43(3.4)	84(6.6)
13. I pay attention not to use an elevator.	411(32.4)	376(29.6)	203(16.0)	167(13.1)	113(8.9)
14. I sleep enough and regularly	356(28.0)	421(33.1)	215(16.9)	153(12.0)	125(9.8)
15. I ensure that the necessary barrier precautions are applied during the transfer of the patient who is isolated	563(44.3)	496(39.1)	60(4.7)	58(4.6)	93(7.3)
16. I change it immediately when my mask gets wet	624(49.1)	462(36.4)	22(1.7)	65(5.1)	97(7.6)
17. I follow the continuous implementation of isolation measures.	508(40.0)	556(43.8)	56(4.4)	59(4.6)	91(7.2)
18. I do not let the patient who undergo isolation to walk outside the room.	715(56.3)	363(28.6)	50(3.9)	53(4.2)	89(7.0)
19. I follow the cleaning of the most touched surfaces frequently.	584(46.0)	448(35.3)	83(6.5)	68(5.4)	87(6.9)
20. I ensure that the materials used in the isolation room are not used in other areas.	603(47.5)	445(35.0)	71(5.6)	60(4.7)	91(7.2)
21. When I take off the gloves, I wash my hands or rub them with disinfectant.	801(63.1)	315(24.8)	17(1.3)	41(3.2)	96(7.6)
22. I take off my gloves before I leave the isolation room.	710(55.9)	344(27.1)	40(3.1)	74(5.8)	102(8.0)
	Yes *N*(%)		No *N*(%)		
Having chronic illness	167(13.1)		1103(86.9)		
Smoking	289(22.8)		981(77.2)		

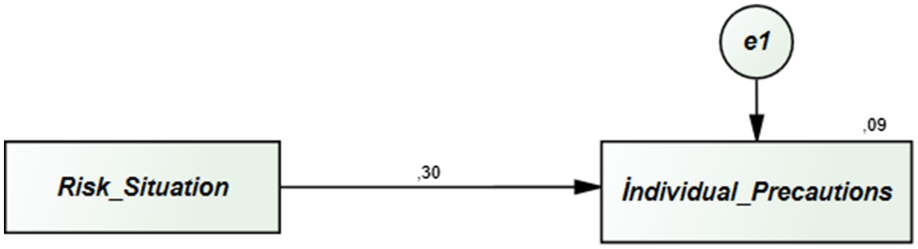

FIGURE 1 Structural equation model diagram for the relationship between personal precautions and risk situation

strongly agree" for each of the items 11, 17, and 23), which showed that many participants had problems regarding this issue. The analysis showed that only 61.1% of the participants could get sufficient and regular sleep (Item 15). It was found that 85.0% of the participants obeyed the quarantine rules (Item 6), 75.7% paid attention to social distance while working (Item 7), and 81.7% obeyed the social distance rule in places where they eat (Item 14). It was found that 46.7% of the participants were concerned that they may be COVID-19 carriers (Item 1), and 38.9% were concerned getting infected with the COVID-19 (Item 2) (Table 1).

The structural equation model showed that the rate of taking individual precautions increased as the risk situation increased (Figure 1). It was calculated that 10% of the individual precautions score was explained by the risk situation ($R^2 = .100$). A change of 1 point in the risk situation should cause a positive change of .682 points in individual precautions ($\beta_1 = .682$, $p < .05$; Table 2). In the established model, the goodness of fit index values obtained as a result of the analysis showed that the model was compatible (χ^2 .962, χ^2/df .481, RMSEA .033, GFI .983, NFI .975, and CFI .972) (Gürbüz, 2019).

Our findings showed that the power of explanation in the measures taken against the risk was highest in those working in pandemic services ($\beta = .389$, $p < .001$) and the lowest in those working in other units ($\beta = .231$, $p < .001$). For the chronic disease variable, it was calculated that 10.7% of the measures taken against the risk were explained by patients with lung diseases, 21.7% by patients with heart diseases, 75.1% by patients with diabetes, and 19.9% by participants with other chronic diseases. Participants with chronic diseases had a high percentage of explanation about the measures taken against the risk, which shows that more personal precautions are taken in case of risk (Table 3).

3.3 | Qualitative findings

As a result of the thematic analysis, five main themes were identified, and each had its own subthemes. While the first four themes stressed the negative aspects of the nurses' experiences during the pandemic period, the last theme interestingly showed the positive aspects of their experiences.

3.3.1 | Psychological and mental strain

Stress, anxiety, and fear

It was observed that simultaneous exposure to many factors such as uncertainty, workload, insomnia, equipment-related problems, change in the work environment, and the risk of infecting the beloved ones led to intensive stress. One participant responded, "In every watch duty, I was stressed and I experienced extreme stress and insomnia. The pandemic has made our stressful work environment more stressful. It used to affect only us, but now, we are worried about our families and environment" (P 18). The mentioned stress was more intense especially for the nurses who stated that they worked at pandemic departments. One of the participants working in a pandemic department responded, "This is not something to say in words. Only those who share this environment can actually understand it. We are extremely busy and work under stress. The risk is high, working conditions are difficult and unsafe" (P 27).

Anxiety and fear were reflected in feelings such as concern about the future, fear of death, fear of losing someone loved or patients, and fear of being a carrier or getting infected. A participant responded, "I am worried about the recovery of the patients. Each of us is a carrier, and I am concerned about infecting other patients with COVID-19. I need to work more carefully and obey all the

TABLE 2 Relationship coefficients of personal precautions and risk situation

Dependent variable	Independent variables	β_1	β_2	Sig.	R^2
İndividual precautions	Risk situation	.682	.303	<.001*	.100

Note: β_1: unstandardized regression coefficients; β_2: standardized regression coefficients; t test value of regression coefficients significance; R^2: determination coefficient.
*$p < .05$.

TABLE 3 Relationship coefficients of demographic variables

Variables		*n* (%)	Coefficients (β)	*p*	R^2	Critical *Z* value groups		
						Binary comparison of groups		
Gender	Female	988 (78.6)	.27	.001*	.073	3.663[a]		
	Male	272 (21.4)	.414	.001*	.171			
Marital status	Single	776 (61.1)	.339	.001*	.115	1.978[a]		
	Married	494 (38.9)	.247	.001*	.061			
Age	30 age and under	897 (40.1)	.252	.001*	.064	30 age and under	31–40 Yaş	2.118[a]
							41 Yaş ve üzeri	2.033[a]
	31–40 age	270 (51.8)	.328	.001*	.108	31–40 age	41 Yaş ve üzeri	3.576[a]
	41 age and above	103 (8.1)	.387	.001*	.150			
Working year	0–5 year	781 (61.5)	.285	.001*	.081	0–5 year	6–15 Yıl	2.613[a]
							16–25 Yıl	1.987[a]
	6–15 year	342 (26.9)	.314	.001*	.099	6–15 year	16–25 Yıl	2.386[a]
	16–25 year	119 (9.4)	.411	.001*	.169			
	26 year and above	28 (2.2)	.179	.357	.032			
Unit	Intensive care unit	305 (24.0)	.344	.001*	.119	Intensive care unit	Emergency	3.261[a]
							Service	2.235[a]
							Pandemic sections	2.340[a]
							Other	1.988[a]
	Emergency	201 (15.8)		.001*	.094	Emergency	Service	3.072[a]
			.307				Pandemic sections	2.527[a]
							Other	2.396[a]
	Service	388 (30.6)	.329	.001*	.108	Service	Pandemic sections	2.539[a]
							Other	3.217[a]
	Pandemic sections	134 (10.6)	.289	.001*	.152	Pandemic sections	Other	2.052[a]
	Other	242 (19.0)	.231	.001*	.053			
Chronic illness	Lung diseases	46 (28.6)	.327	.020*	.107	Lung diseases	Heart diseases	−0.146
							Diabetes	4.004[a]
							Other	2.066[a]
	Heart diseases	46 (28.6)	.217	.002*	.047	Heart diseases	Diabetes	3.984[a]
							Other	1.978[a]
	Diabetes	7 (4.3)	.867	.001*	.751	Diabetes	Other	3.157[a]
	Other	63 (38.5)	.446	.003*	.199			

[a]Critical $Z > 1.96$.
*$p < .05$.

rules. If I don't obey the rules, I feel like I will get sick and die at any time" (P 17). Another participant responded, "I feel weak, I'm afraid I won't be able to protect my family. Every patient is a suspect!" (P 18).

Depressive emotions, obsessive behaviours, and psychological fatigue

Excessive workloads, work environments that are substantially different from the familiar ones, and environmental pressure caused depressive emotions and obsessive behaviours in many nurses. One participant responded, "The intensive care area, which is already depressing, has become more and more depressing. I feel like a robot that is worried about its own life, runs for other lives and has forgotten itself" (P 28). Another participant responded, "My obsessions have increased and this affects me more and more every day. I started to feel like this virus is everywhere" (P 30).

The nurses frequently mentioned that the need to provide care to many patients simultaneously and changing conditions exhausted them mentally during the pandemic period. It is noteworthy that the intense feeling of uncertainty makes this fatigue permanent. One participant responded, "Being restricted and distant, behaving more carefully, obeying hygiene rules-warning those who don't, changing the current habits, working more! I'm tired, I need to listen to myself. This obscurity feels like it will always be like this" (P 1).

3.3.2 | Personal protective equipment

Low comfort due to continuous use

Participants, especially those working in critical areas like intensive care units, emphasized that they had difficulty in using PPE. Many participants reported particularly complaints of sweating, sore throat and headache, difficulty in breathing, and allergies related to the long-term use of PPE. A participant responded, "The equipment I use makes me sweat a lot. I get more tired. We need the equipment to be produced in compliance with long-term work" (P 1). Another participant responded, "The use of masks has led to nasal discharge and sore throat. I have a headache due to wearing a mask all the time, my hands are constantly chapped. I think the worst of all is not getting air" P (8).

The care required in putting on and taking off PPE often cause physical fatigue. One participant responded, "It is an unbelievable work load to visit the patient's room with equipment. This means standing for hours. Your effort while trying to protect yourself is very tiring" (P 21).

The need for PPE complying with the standards

Some participants stated that they could not find sufficient materials in the early periods of the pandemic. One participant responded, "At the beginning, we had a shortage of materials for a long time. It is really such a risky action to enter the patient room with lack of equipment that we experience inexplicable fears" (P 17). Some nurses complained about the quality of the materials. One participant responded, "We had difficulty in finding suitable equipment in the hospital; we had to use unsuitable masks" (P 9).

3.3.3 | Organizational, physical, and social strains

Changes in working environment, order, and hours

COVID-19 changed the working ecology of all the hospitals. Participants reported that they experienced this change sometimes when they were assigned to other units, and often by working very long hours. One participant responded, "My unit, team, and working hours have completely changed. Sometimes, we had two 24-hour shifts a week" (P 32). Another participant responded, "I am at a different department in every watch duty or every month. My work pattern has been out of order. I had to work where I had never worked and adapt to the unit in a short time, this is very difficult" (P 25).

Financial difficulty and transportation problems

Several participants stated that they were not sufficiently compensated for the work they did. A participant responded, "I don't think our efforts are valued. Of course, we will do our best, but we must be compensated (accordingly)" (P 3). Another participant responded, "I should be provided with satisfactory financial support. The gaps between the payments of the nurses and doctors should be eliminated. All we want is arrangement in salaries and additional payments, because we exist altogether" (P 19).

Some participants had difficulties in arriving at workplaces during this period. Nurses working in remote areas, such as district hospitals, mentioned about their transportation problems. To express this problem, one participant responded, "We are having difficulties in matters such as transportation due to the restrictions. I wait for a bus for one hour to go to work" (P 7).

Fatigue due to increased workload and insomnia

Changes in patient profile and working environment made several additional measures necessary, which yielded in both an increase in workload and insomnia. Most of the participants experienced severe fatigue due to increased workload and insomnia. To express her fatigue, one participant responded, "The number of patients has increased a lot. A 24-hour shift is quite tiring, insomnia and insufficient rest are at the peak level! I used to get tired before. Now, I get tired twice as much" (P 27). Another participant responded, "I am working more carefully and meticulously to ensure isolation. Putting on/taking off the equipment and taking care of the patients with them have increased our workload substantially. I get tired of working for hours with extreme attention" (P 9).

An ongoing process between home and hospital: Being trapped and loneliness

During the COVID-19 period, nurses were always at home/dorms when they were not at work. Most nurses working in intensive care or pandemic units stated that they isolated themselves and sometimes they could not even go home. One participant responded, "Our social lives are over. We go out only for mandatory work. We try to comply with quarantine conditions as much as possible. Being away from our family and beloved ones and commuting between dormitory and hospital have ended my social life" (P 4). Another participant responded, "I have no social life due to struggling with COVID-19 and obeying the quarantine rules in the rest of my time. Social life has become nothing more than the telephone and the Internet" (P 11).

The nurses mentioned that they felt lonely and excluded, sometimes only because they were health professionals, and sometimes because they stayed at dormitory alone. One participant responded, "People stay away from me because I am a health professional. This affects me negatively and I feel unhappy" (P 4). Another participant responded, "I had to rent a separate house, I can see my family only through the door, when I go for their shopping. I cannot even touch my daughter. I have to live alone. It is said that some people move away from us, behave as if they are different and feel scared of us" (P 10).

3.3.4 | Change in professional values

I want to be visible: notice me

Nurses are at the centre of the health system. They expect this fact to be known that their services should be visible, and the difficulties they experience on daily basis should be noticed. One participant

responded, "What we mostly need is that our people should value our effort and be careful. All I need is to be thanked. But not with clapping. I want everyone to know that I am also in the sector and I am right in the middle of it" (P 3). Another participant responded, "I want to see support, tolerance and understanding. I want our administrators, our environment and the society to realize the seriousness of the work we do. I need our dedication to be noticed" (P 7).

Decrease in performance and motivation

The pandemic caused difficulty in nurses' performance and motivation. One participant responded, "I am very exhausted. Although it is the nurses who mostly deal with patients, this value is not appreciated, which has decreased my motivation and job satisfaction. I have doubts about carrying on my profession, which I have happily practiced so far" (P 22). Another participant responded, "Since we are faced with a disease which we have not known before and the crisis is not managed well, we have started to work restlessly and unpeacefully. Because there is no transparency and fair behavior in assignments, I feel our work motivation has decreased. Administrators do not contact us! This injustice and ignorance will consume us" (P 14).

3.3.5 | Turning the crisis into an opportunity: Increase in professional and spiritual satisfaction

Some participants stated that their belief in their own power and the power of their profession increased while struggling against COVID-19. In addition, nurses emphasized teamwork and stated that their belief in their team increased. One participant responded, "I feel that I am professionally satisfied, I have gained great experience and my self-confidence has increased. Definitely, the pandemic has made our work lives difficult, but it has made contributions to us as well" (P 6). Another participant responded, "We are making history. Being a part of it is sublime. It has been a very tiring process, but I would never think about sitting in my house under any circumstances. It is awesome to be able to serve people and to take on responsibility in such a period" (P 12). Another participant replied: "COVID-19 made me very tired, but it also improved me a lot. Especially seeing that the cooperation within our team has increased and everyone is making an effort to take responsibility increases my belief in my profession." (P26).

Behind the positive experiences expressed by many participants were the feeling of spirituality. Many participants expressed that they learned to be patient, understood the value of their freedom and their possessions, and got more mature. One participant responded, "Although the restrictions were initially unsettling, they taught me a lot. I have learned how to be patient, how to content myself, how valuable every breath and every step I take is, and how precious living freely is" (P 26). Another participant responded, "I think this period will be an investment in my future life, I'm now mature" (P 6). Another participant stated: "COVID-19 has increased my awareness. I realized the value of what I have. I hope I don't go back to my old empty life. I hope I don't forget the value of my indispensable things, which I see as small things, and I will be content with being happy with what I have" (P 12).

4 | DISCUSSION

The quantitative part of the research revealed that the rate of taking personal measures against COVID-19 was high in nurses (min: 61.1%, max: 89.3%). It was also stated that health professionals reported a high rate (88.7%) of good practice during the COVID-19 period (Saqlain et al., 2020). The structural equation model revealed that 41 years old or older, female, and single participants, those who were diabetic, and those working at pandemic departments were more likely to take personal measures against the risk of COVID-19. Saqlain et al. reported that experienced nurses (>5 years) were more likely to demonstrate good practice (Saqlain et al., 2020). These results indicated that nurses were able to take personal measures to protect the public health and themselves during public health emergencies. These results suggest that nurses whose strengths are recognized may play key roles in future public health emergencies.

The current pandemic had a compelling effect on nurses. In this study, excessive behaviours seen in high-risk participants reflect the overarching theme of "psychological distress." This overarching theme is woven along the subthemes of "stress, anxiety and fear" and "depressive emotions, obsessive behaviors, and psychological fatigue." The psychological strains indicated had characteristics that could prevent the nurses from working with full potential and may affect their future experiences. These findings were consistent with the results reported in previous studies (Bohlken et al., 2020; Brooks et al., 2018; Khalid et al., 2016; Liu et al., 2020; Nemcová et al., 2017; Ran et al., 2020; Wu et al., 2020). These findings suggest that the psychological distress experienced by nurses is important. Considering the frequency of the mental symptoms in nurses, it is necessary for them to take part in interventions in order to be able to cope with their mental issues (Bohlken et al., 2020; LoGiudice & Bartos, 2021). The research during past pandemics has shown that health care workers are more likely to develop post-pandemic stress disorder (Lee et al., 2018; Tam et al., 2004). Increasing the number of staff, arranging the shift system, providing psychological counselling and guidance in the form of support services on online platforms or by phone, especially to relieve front-line nurses can alleviate the permanent effects of psychological difficulties (Çınar et al., 2021; Kang et al., 2020).

A high level of efforts to comply with PPE rules (over 84%) were thought to result in low comfort. In the subtheme of low comfort due to continuous use of PPE, various problems such as sweating, difficulty in breathing, allergy, and sore throat were highlighted, which showed the difficulty in working in PPE for a long time. Studies touching upon the comfort level in relation with PPE have shown that nurses spend a lot of time to change their clothes, fog-drips appear on the glasses deteriorating the sight of the nurses, headache, sore

throat, dehydration, and sweating occur during the use, and temporary deformation is observed on some nurses' skin and faces as they wear N95 masks for a long time (Den Boon et al., 2018; Ong et al., 2020; Zhang et al., 2020). It is believed that arrangement of shift hours and durations by administrators according to workloads and duties among the nurses who use and do not use PPE, and collaboration and increasing the number of professionals will be useful (Chirico et al., 2020; Jiang et al., 2020; Zhang et al., 2020). In addition, the findings highlight the importance of providing adequate ergonomic and validated protective equipment.

The subthemes of "change in the working environment, order, and hours" and "financial difficulty and transportation problems" indicated that the pandemic changed the entire nature of the hospitals. Unusually long working hours and organizational disorders in newly opened pandemic departments and newly formed teams were the most common administrative problems. Previous research showed that actual working hours were longer than the ideal working hours preferred by nurses (Zhang et al., 2020). It was also reported that long working hours could contribute to a series of negative effects on nurses, patients, and the health system (Bae & Fabry, 2014; Kunaviktikul et al., 2015). Working with low salaries under these challenging conditions and differences in payments were mentioned by the nurses in a rebellious way. Hospital administrators should be sensitive to the needs and demands of the nurses in order to increase their compliance with the changing working conditions and to realize the problems they experienced (Adams & Walls, 2020; Jiang et al., 2020).

The fact that 61.1% of the participants stated that they could get sufficient and regular sleep pointed to the problems related to basic needs. We associated these problems with the subtheme of "fatigue due to increased workload and insomnia." In a research study conducted in China, physical strains were mentioned repeatedly (Zhang et al., 2020). Physiological needs of the nurses who participated in the study mainly included adequate rest, eating, and going to the toilet. Yao et al. (2020) concluded that seven front-line nurses who provided care to COVID-19 patients had heavy workloads. Work intensity affects the efficiency and strength of the nurses. For this reason, it is important to continuously optimize the number of nurses and to arrange the shift systems in a way that provides adequate rest and nutrition in order to ensure the continuity of the workforce (Çınar et al., 2021; He et al., 2021; Kang et al., 2020; Wang et al., 2020).

The efforts of the nurses to comply with the quarantine conditions and social distance rules in the working environment and food halls are remarkable. Our findings that high rates of adherence to quarantine rules (85.0%) and social distance rules while working (75.7%) or eating (81.7%) provided information about the social lives of the nurses. Among the qualitative results, the subtheme "An ongoing process between home and hospital: being trapped and loneliness" supports these findings. For nurses, the need to comply with strict quarantine conditions has brought their social life into inexistence. Social life, which was described by nurses as an ongoing process between loneliness and home/hospital, was over for the nurses. Many nurses felt trapped and excluded. On the contrary, nurses wanted to be visible and right in the middle of the health system. How working and living conditions of the nurses will be managed and how their social needs will be ensured are important problems that need to be addressed by health administrators (Shanafelt et al., 2020; Zhang et al., 2020). Although the hospitals where the nurses work provide adequate support for sheltering due to the risk of contamination, it has been observed that the nurses are insufficient in supporting personal family dynamics. The lack of arrangements made it impossible for nurses to overcome the psychological burden of being separated from their relatives. These situations forced them to cope with their anxiety and fears on their own (Muz & Erdoğan Yüce, 2021).

The study included many nurses with chronic diseases such as lung disease, diabetes, and heart disease (lung diseases = 46; heart diseases = 46, diabetes = 7 and other chronic disease = 63), and they are in the vulnerable group for COVID-19. It was found that 46.7% of the nurses thought that they were COVID-19 carriers. In addition, some of them reported that they were more likely to be sick (38.9%). It was assumed that this situation led to the development of negative thoughts about the profession in many nurses who thought that they were vulnerable. Throughout the theme of change in professional values, the desire to be noticed and visible, the feelings of low performance and motivation were repeated. In this context, our study showed that in the pandemic period, conditions such as exhaustion, burnout, alienation from the profession, feeling unworthy, injustice, administrative deficiencies, and role confusion led to performance and motivation difficulties. In previous studies, organizational justice belief in nurses has been found to be associated with work commitment, intention to leave (Cao et al., 2020), and negative behaviours (Seyrek & Ekici, 2017). As in past epidemics, nurses stated that they did not want to continue their profession in this epidemic (Bai et al., 2004). Our findings are consistent with the results from past epidemic periods. In this respect, these thoughts of the nurses may indicate that there may be serious consequences creating obstacles to the delivery of quality care in the future. In fact, crises are turning points (Yıldırım et al., 2021). Sometimes there are achievements in all challenges. So, there were also nurses who reported positive experiences in this crisis. The theme of our results about "transforming crisis into an opportunity" indicated that there were positive changes in the professional and spiritual feelings of some nurses. These nurses stated that gaining experiences, and cooperating and succeeding in the pandemic process increased their professional satisfaction. Participants in a past study also stated that although it was difficult to take care of COVID-19 patients, it strengthened their willpower, helped them discover their potential (Sun et al., 2020), and that society's appreciation of them and understanding the meaning and value of nursing strengthened their motivation (Muz & Erdoğan Yüce, 2021).

The main limitation of this study was the fact that the experiences of the nurses were obtained via their self-evaluations, which was far from objectivity by definition. Because some nurses

had limited online experiences and some were unable to access the questionnaire due to technical issues, response rate may have been negatively affected. Third, in the analysis of online messages, misinterpretations may have occurred because online messages cannot transmit nonverbal signs. However, we analysed all the messages within the context by attentively reading them.

5 | CONCLUSION

The present research presents scientific data for nurses, authorities that develop health care policies during pandemic periods, and health care administrators. This study showed that personal measures are related to the risk status. The themes obtained as a result of the experiences of the nurses revealed that there is a need to protect the nurses with important measures such as the use of strong psychosocial and psychological help, meeting their basic needs, providing social support, fair distribution of the duties, and the determination of ideal working hours for preventing the damages which may arise due to increased workload.

6 | IMPLICATIONS FOR NURSING MANAGEMENT

Our study highlights some of the important issues related to COVID-19 for nursing managers. First, we could be prepared to protect sensitive groups of nurses who strive to take personal precautions, especially according to the model described vulnerable groups as those who work in pandemic services and those with chronic diseases. Good mental health support could be essential in times of crisis. Planning longer term psychological support could be vital, especially for nurses who are in the high-risk group and need more personal measures. PPE-related discomfort was strikingly pronounced. Nurse managers have the opportunity to ensure that the right type of equipment is available, and take action against PPE-related problems by organizing working hours for frontline nurses. Finally, our study highlights the need for greater national cooperation between governments, health systems, and managements to ensure optimal response, timelines, and correct communication in future health emergencies. In this context, more efforts could ensure good work, fair treatment, no tolerance for discrimination, and equal payment conditions and environments together with the political reform (Black et al., 2020).

ETHICS COMMITTEE APPROVAL

This study was approved by the Non-Interventional Clinical Research Ethics Committee of Inonu University Institute of Health Sciences (decision number: 2020/669).

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CONFLICT OF INTEREST

No potential conflict of interest was reported by the authors.

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AUTHOR CONTRIBUTIONS

Zeliha Cengiz: Concept, design, supervision, resources, materials, data collection and/or processing, analysis and/or interpretation, literature search, writing manuscript. **Kevser Isik:** Concept, design, resources, materials, data collection and/or processing, literature search, writing manuscript. **Züleyha Gurdap:** Concept, design, supervision, resources, materials, analysis and/or interpretation, literature search, writing manuscript. **Emriye Hilal Yayan:** Concept, design, supervision, resources, materials, analysis and/or interpretation, literature search, writing manuscript, critical review.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Zeliha Cengiz https://orcid.org/0000-0002-3819-1717
Kevser Isik https://orcid.org/0000-0001-9081-7660
Züleyha Gurdap https://orcid.org/0000-0002-2231-8218
Emriye Hilal Yayan https://orcid.org/0000-0003-0075-4171

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