



## The experiences of nurses and midwives providing care for covid-19 patients and their special precautions for protection

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### ARTICLE INFO

#### RESEARCH ARTICLE

Article history:

Received: 31 July 2021

Accepted: 18 March 2022

Available : 23 March 2022

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Turkish Journal of Health Science and Life  
2022, Vol.5, No.1, 28-34.

### ABSTRACT

The study aimed to determine the experiences of nurses and midwives providing care for COVID-19 patients and their special precautions for protection. This study sample consisted of 177 nurses and midwives who agreed to participate in the study between September 2020 and February 2021, who were from all regions of Turkey, and who filled the online form. The data were collected with a questionnaire form prepared by the researchers according to the literature; the form contained the information on nurses' and midwives' characteristics and their opinions on the COVID-19 process. The COVID-19 affected the psychology of 90.4% of the participants negatively. The rate of the participants who were positive for the COVID-19 test was 3.9%; the rate of those who had a colleague with COVID-19 was 81.4%. 67.2% of the participants stated that the protective materials given by their institutions were inadequate. Therefore, they also obtained protective materials by their means. Except for the materials used for protection from the pandemic, the rate of those who made special applications was 14.7%. 38.4% of those who made special applications washed their hands all the time, and 34.6% of them took vitamin supplements. As a result, some of the participants provided this equipment with their means due to the insufficiency of those provided by their department. The special precautions used for the protection from the epidemic were mostly hand washing and taking vitamin supplements. The measures should be taken against problems in the supply and use of protective equipment.

**Key Words:** Fatty acid composition, olive oil, total antioxidant capacity .

### INTRODUCTION

In early December 2019, the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV2) emerged in Wuhan, China. Since then, local and national governments have started to take measures in many areas to set back the spread of the disease (1,2). The World Health Organization (WHO) classified the Coronavirus Disease 2019 (COVID-19) outbreak as an "international public health emergency" on January 30 and defined it as a global epidemic (pandemic) on March 11. The studies on COVID-19 in Turkey started on January 10; the Scientific Advisory Board of the Turkish Ministry of Health made their first meeting on January 22, and the first COVID-19 case in Turkey was seen on March 11 (3). As of December 5, 2020, there were 66,390,508 COVID-19 cases and

1,527,498 deaths in the world, and 765,997 COVID-19 cases and 14,509 deaths in Turkey (4).

Although healthcare professionals have been affected by many different infectious diseases until today, they have the risk of being affected by similar epidemics in the future (5). The year 2020 has been declared as the Year of Nurses and Midwives by the WHO. Due to the COVID-19 pandemic, the profession of nursing and midwifery took its place on the world agenda (6). Nurses and midwives provide one-to-one care to hospitalized patients with COVID-19 (7,8). In this period, the need for healthcare workers working in intensive care units increased since the number of patients infected with SARS-COV2 virus increased in a short time, and the importance of the concept of care revealed with the increase in the number of

patients (9,10).

Healthcare professionals providing care before and after the hospitalization do not know whether a patient is positive for COVID-19 or not. However, they are in close contact with patients, and they race against time, and therefore they are very likely to be infected (11). In this period when everyone is afraid of approaching each other, nurses and midwives continue to do their profession eagerly and touch persons and human life as long as they feel safe.10 The International Council of Nurses (ICN) confirmed that 1,500 nurses in 44 countries died due to COVID-19, and they estimated that more than 20,000 healthcare professionals probably died worldwide because of COVID-19 (6). Therefore, nurses should be supported to protect themselves in line with infection control protocols while providing care to patients infected with COVID-19 (7,12,13). It is stated that the risk of transmission of infection to healthcare workers reduces by using personal protective equipment compatible with the guides of the Republic of Turkey's Ministry of Health and General Directorate of Public Health and Literature (5). A specific understanding of the problems and demands of healthcare providers is necessary to create a safe healthcare system that effectively fight against future national disasters.

Our research questions were as follows:

- What were their experiences during the COVID-19 pandemic?
- Are there the special protective precautions they use to protect against the transmission of the COVID-19 virus?
- What are the problems related to the protective equipment used?

## **MATERIAL AND METHOD**

### **Study design**

This descriptive and cross-sectional study was conducted to determine the experiences of nurses and midwives who were providing care for COVID-19 patients and their special precautions for protection in Turkey.

The universe of the study consisted of all nurses and

midwives working in the departments of all public, university and private hospitals in Turkey, in which patients with COVID-19 were receiving care between September 2020 and February 2021. Turkey's Statistical Agency by the most recent data for the number of nurses and midwives was published in 2018. For this reason, the sample calculation was made in the Sample Size Calculator program through all nurses and midwives (246,850) working in public, university and private hospitals in 2018 (14). In the program, type 1 error was found as 0.05 and when the power was taken as 90%, 177 people were found. We made contacts with 542 nurses and midwives, 177 of them agreed to participate in the study and filled the questions of the scale. The questionnaire form was created on Google Forms and sent online to nurses and midwives.

### **Data collection measurements**

The sociodemographic data form was prepared to take into account the education levels and working conditions of the participants, and the aim of the study. This form consists of a total of 8 questions on gender, age, marital status, educational status, profession, and working years. Also, the questionnaire forms as the views of nurses and midwives on COVID-19 (8 questions) and their opinions on protective measures used in fighting against COVID-19 (6 questions), which were prepared by the researchers according to the literature, were used (5,7-10).

### **Statistical analysis**

The data were computerized, and statistical analyses were performed using the IBM SPSS 21.0 statistical package program. The data were analyzed with frequency, percentage, mean.  $p < 0.05$  was considered as statistically significant.

### **Ethical considerations**

The ethical committee approval was obtained from the Non-Interventional Clinical Research Ethics Committee of Burdur Mehmet Akif Ersoy University (Date: 20.08.2020; Decision No: GO 2020/191) to conduct the study. Another approval was obtained from the Scientific Research Evaluation Commission of the Ministry of Health before the study. We

reached the participants via an online questionnaire link and their informed consent was obtained via an online link before the study.

## RESULTS

The mean age was 31.22±7.63, 54.8% of them were under 30 years of age; 86.4% of them were female; 48% of them were married; 39.5% of them had children; 75.1% of them were university graduates. 79.1% of the participants were nurses; 46.3% of them worked in the profession for less than 5 years; 39.5% of them worked in intensive care units (Table 1).

**Table 1.** Socio-demographic characteristics of Nurses and Midwives (N=177)

Variable	n	(%)
Age (Years) ( $\bar{X} \pm SS$ )	31.22±7.63	
< 30	97	54.8
30-40	52	29.4
> 40	28	15.8
<b>Gender</b>		
Female	153	86.4
Male	24	13.6
<b>Marital Status</b>		
Married	85	48.0
Single	92	52.0
<b>Children</b>		
Yes	70	39.5
No	107	60.5
<b>Education</b>		
Health School	11	6.2
Associate degree	15	8.5
License	133	75.1
Postgraduate	18	10.2
<b>Job</b>		
Nurse	140	79.1
Midwife	37	20.9
<b>Working time in the profession</b>		
Less than 5 years	82	46.3
5-10 years	34	19.2
More than 10 years	61	34.5
<b>Department of work</b>		
Intensive care	70	39.5
Clinic	54	30.5
Urgent	14	7.9
Delivery room	12	6.8
Policlinic	8	4.5
Family Health Center	8	4.5
District Health Directorate	7	4.0
Filliation	4	2.3

36.2% of the participants experienced a unit/ an assignment change due to the pandemic; 45.2% of them did not have any change in their weekly working hours; 68.4% of them received training on

COVID-19; 87.6% of them received training from their institutions. 47.4% of the participants were proud to be a healthcare worker; the COVID-19 pandemic affected the psychology of 90.4% of the participants negatively; the rate of those who were previously positive for the COVID-19 test was 3.9, and the rate of those who had a colleague with COVID-19 was 81.4% (Table 2).

**Table 2** Nurses and Midwives' views on COVID-19 (N: 177)

	n	(%)
<b>A unit/ an assignment change due to the pandemic</b>		
Yes	64	36.2
No	113	63.8
<b>Change in their weekly working hours</b>		
Weekly working hours decreased	29	16.4
Not changed	80	45.2
Weekly working hours Increased	68	38.4
<b>Training on Covid 19</b>		
Yes	121	68.4
No	56	31.6
<b>Where was educated</b>		
Institution of employment	106	87.6
Professional association	15	22.4
<b>How it affected being a healthcare worker during the pandemic process?</b>		
I am honored	84	47.4
I regret choosing this profession	70	39.5
My commitment to my profession has increased	23	13.1
<b>COVID-19 pandemic impact on psychology</b>		
Very bad	160	90.4
Bad	16	9.0
Did not affect	1	0.6
<b>Those who were previously positive for the COVID-19 test **</b>		
Yes	7	3.9
No	170	96.1
<b>Those who had a colleague with COVID-19</b>		
Yes	144	81.4
No	33	18.6

Considering the protective measures used by the participant nurses and midwives during the fight against COVID-19; 100.0% of them used masks; 94.4% of them wore gloves; 84.7% of them used plastic face shields according to their statements. 67.2% of them

stated that the protective materials provided by the institution were inadequate while 31.6% of them stated that the protective materials provided by the institution were inadequate, and therefore they also provided these materials by their means. The rate of those who made special precautions other than the materials used for protection from the pandemic was 14.7%; 38.4% of them washed their hands all the time, and 34.6% of them took vitamin supplements. 80.8% of the participants had problems while using protective materials; 41.3% of them experienced deterioration in general comfort, and 37.1% of them had dermatological problems (Table 3).

**Table 3** Nurses and Midwives' views on protective measures used in combating COVID-19 (N: 177)

	n	(%)
<b>Measures taken to prevent the Covid-19 outbreak*</b>		
Masks	177	100
Gloves	167	94.4
Face shields	150	84.7
Apron	145	81.9
Overalls	18	10.2
<b>How the protective materials used during the epidemic were provided?</b>		
My unit provided	119	67.2
I bought it myself	2	1.1
I bought it myself because what my unit provided was not enough	56	31.6
<b>Making a special application other than the materials used for protection from the epidemic</b>		
Yes	26	14.7
No	151	85.3
<b>Special applications other than the materials used for protection from the pandemic (n: 26)</b>		
Washed hand all the time	10	38.4
Vitamin supplement	9	34.6
Insulation	3	11.5
Spraying disinfection on the touch area	3	11.5
Black Elderberry Sap	1	4.0
<b>Difficulty using protective equipment</b>		
Yes	143	80.8
No	34	19.2
<b>Problems encountered with protective materials</b>		
Deterioration general comfort	59	41.3
Dermatological problems	53	37.1
Respiratory distress	31	21.7

## DISCUSSION

We evaluated the opinions of the nurses and midwives regarding the COVID-19 process. Nearly half of the participants experienced a department/assignment change due to the pandemic; 38.4% of them had increased weekly working hours. Yüncü and Yılan stated that 86.11% of the participants had a change in their working conditions (15). In another study, nearly half of the respondents reported that their working hours decreased since the beginning of the pandemic; they made a threat to leave their jobs or they were dismissed. The same study also stated that employees had additional responsibilities other than their duties (16). Another study showed that the working hours of nurses increased during the COVID-19 epidemic 1.5-2 times due to the increasing number of patients, and the workload increased in parallel with the increase in working hours (17). In a study which was conducted in Germany, all routine procedures and operations stopped by necessity due to the pandemic. For this reason, the working time of healthcare professionals working only in emergency rooms, intensive care units, and COVID-19 services has increased (18).

In our study, nearly half of the participants were proud to be a healthcare worker, but the pandemic negatively affected the psychological status of nearly all of them. A study found that nurses experiencing post-traumatic stress disorder regretted their choice of profession, thought of resigning, or moved away from their job (19). In another study, COVID-19 provided many opportunities for professional healthcare development, such as love, affection, dignity, and respect for the profession, gratitude, and active cooperation in the care of patients (17). Im et al. had interviews with intensive care nurses providing care for patients with MERS-CoV in Korea. They identified 3 factors for the emotions of healthcare professionals as hopelessness and cuteness, shame and perception of overworking, and pride-performing a task (20).

According to the statement made by the Republic of Turkey's Minister of Health at the end of September,

40,000 healthcare workers had COVID-19; more than 100 of them lost their lives (21). In our study, although the rate of those who were positive for the COVID-19 test before was very low, the rate of having a colleague with the positivity for the COVID-19 was 81.4%. Those who experienced disasters in the past were reported to be good supporters if the same situation occurs in the future. Therefore, healthcare providers with such experience should be seen as valuable human resources and appropriately rewarded (22). For this reason, it is important to support nurses and midwives both spiritually and financially during the pandemic.

Measures to protect healthcare professionals should be taken meticulously to minimize the contagion of the virus. Considering the protective measures used by participant nurses and midwives, all of them were using masks, almost all of them were wearing gloves and 84.7% of them were using facial shields during providing care. In the study of Halcomb et al., less than half of the participants stated that they did not have enough equipment to avoid the pandemic. According to the findings of the same study, the same mask is used in more than one shift and glasses are used by more than one user to use the protective equipment stock economically (16). In a study conducted in China, when the rate of the spread of infection decreased, people crew over and reduced the use of protective equipment, and thus the number of cases and transmission rate increased (23). The inadequate use of protective equipment is an important factor in increasing the risk of infection in healthcare workers. For this reason, it is important to use protective equipment adequately and appropriately.

More than half of the participant nurses and midwives thought that the protective materials provided by their institutions were inadequate while 31.6% of them thought that the protective materials provided by their departments were inadequate, and therefore they obtained these materials with their means. We also found that more than half of the participants received training on COVID-19. Galehdar et al. stated

in their study that there was a lack of access to protective equipment (21). The fact that congresses, which is one of the most important areas of information sharing and cooperation, could not be held in physical spaces disrupted the scientific process. Therefore, many associations have limitations in education (24). In another study, nurses with low seniority and no experience of intensive care or flu care stated that their training and professional skills should be improved (25).

Apart from the materials used for the protection from the epidemic, 38.4 of those who made special precautions were hand washing all the time and 34.6 was taking vitamin supplements. During the COVID-19 outbreak, it is stated that individuals from every segment of society turn towards traditional treatment practices, especially medicinal herbal practices, within the scope of complementary practices and measures (26). Considering those wrong complementary methods can be used to cope with the virus with fear, it is important to identify situations that may cause harm and to provide necessary information about these situations.

It was stated that 80.8% of the participants had problems while using protective materials; almost half of them experienced deterioration in general comfort, and 37.1% of them had dermatological problems. Long-term use of personal protective equipment can cause pressure sores and scars, eczema, acne, and hand eczema with pain due to constant hand washing (27). Karasu and Ozturk determined that nurses working in intensive care units experienced difficulty in meeting their physiological needs while using personal protective equipment, they also had fear of exposure to the pathogen, fear of death, fear of infecting their family members, and feeling of vulnerability (28).

In the data analysis of Galehdar et al., it was described as a conviction inside a fence full of protective equipment. According to the participants' experiences, wearing protective clothing and equipment is difficult and troublesome for nurses. The participants reported that wearing protective

clothes restricted their mobility, increased body temperature, and sweating, and caused a feeling of suffocation. They described nursing care as difficult while wearing protective clothing (29). According to another study, nurses become tired and exhausted after they wear protective clothing for a long time (17). In the study conducted by Elston, the prevalence of skin damage due to advanced prevention measures was reported to be 97% among healthcare workers working on the front line (30). The use of protective equipment especially causes skin problems, and simple interventions that can be made to protect skincare before and after the use of protective equipment can help healthcare professionals to continue to provide quality care.

There were some limitations in our study. First, our results do not have a causal relationship since we conducted a cross-sectional study. Second, we could not reach all nurses and midwives providing care for patients with COVID-19.

## CONCLUSIONS

The protective equipment used by healthcare staff during the pandemic was mostly provided by their department. However, one-third of them also provided this equipment with their means due to the insufficiency of those provided by their department. It has been found that they mostly suffered from skin problems as a result of protective equipment usage. Apart from the materials used for the protection from the epidemic, special precautions were mostly hand washing and taking vitamin supplements. While dealing with a pandemic, it is recommended to provide continuous training of healthcare staff, to provide sufficient protective equipment to them, know special applications, to take measures against the problems that may occur during the use of protective equipment. Our results can be used as basic data to create a safer healthcare system to protect healthcare professionals and patients. Considering the limitation of this study, there is a need for more comprehensive studies with larger samples in the future.

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