Original Article

# Determination of the Relationship between Intensive Care Nurses' Fear of Covid-19 and their Care Behaviors

**Remziye Gebes Kaya, MSc**
**Specialist Nurse, Amasya University Sabuncuoglu Serefeddin Training and Research Hospital, Amasya, Turkey**

**Kenan Gumus, PhD**
**Assoc. Professor, Amasya University Faculty of Health Sciences, Department of Surgical Nursing, Amasya, Turkey**

**Correspondence:** Gumus Kenan, PhD, Assoc. Professor, Amasya University Faculty of Health Sciences, Department of Surgical Nursing, Amasya, Turkey e-mail: kenan.gumus@amasya.edu.tr

**Abstract**
**Objective:** The aim of this study was to determine the relationship between the fear of Covid-19 experienced by nurses working in the ICU during the pandemic and their care behaviors.
**Method:** This descriptive and cross-sectional study was conducted with 171 nurses working in the ICUs of public hospitals in seven regions of Turkey. The data were collected using the "Nurse Descriptive Information Form", "Fear of Covid-19 Scale (FCV-19S)" and "Caring Behaviors Scale (CBS-24)". The questionnaire and scales were delivered to the participants online via *Google Form*.
**Results:** The mean score of the nurses who participated in the study was found to be 19.81±6.57 andthe mean score of the CBI-24 was found to be 5.18±0.89. It was determined that the mean scores of the nurses who were female (*p=0.004*), who expressed dissatisfaction with their profession (*p=0.002*), who thought that the increase in the number of patients in the pandemic reduced nursing care (*p=0.043*), who were afraid of catching Covid-19 (*p=0.0001*) and who stated that vaccination did not affect the fear of catching Covid-19 (*p=0.009*) were higher. It was determined that nurses working in a university hospital had a higher mean score of CBI-24 (*p=0.010*). It was found that nurses working in the secondary ICU and nurses who stated that the time they allocated to patient care decreased during the pandemic had a lower mean score on the CBI-24 (*p=0.026; p=0.023*, respectively). There was no significant relationship between the mean scores of the fear of Covid-19scale and the mean scores of the CBI-24(*p=0.067*). There is a significant positive correlation between the mean score of the fear of Covid-19 scale and the mean scores of respectfulness, commitment andknowledge-skill, which are the sub-dimensions of the CBI-24 (*p=0.038, r=0.159; p=0.023, r=0.174;p=0.08, r=0.208,* respectively).
**Conclusion:** It was observed that there was no relationship between fear of Covid-19 and care behaviors. It was observed that ICU nurses' thoughts about the care processes in the Covid-19 pandemic and some of their individual and professional characteristics affected their fear of Covid-19 and care behaviors.

**Keywords:** Fear of Covid-19; caring behaviors, nursing, intensive care.

## Introduction

The spread of the SARS-CoV-2 virus, which caused Covid-19 in China in 2019, across the world and the emergence of pneumonia cases due to the virus brought along a significant health problem (Singhal, 2020). The fact that healthcare workers as well as civilians are highly affected by the disease has brought the problem to a difficult point. In Turkey, 11.5% of Covid-19 cases were healthcare workers (Kiraner and Terzi, 2020). The Covid-19 pandemic, which had extremely devastating effects, caused problems mostly in the provision of care and treatment services (Cevirme and Kurt, 2000).

Of the patients infected with Covid-19, 20% needed hospitalization and 5-8% needed intensive care (Akboga, 2020, Tosun & Sert, 2021). The care and treatment of patients infected with Covid-19 who develop severe pneumonia, ARDS (Acute Respiratory Distress Syndrome), septic shock and organ failure are carried out in

the intensive care unit (ICU). Intensive care nurses (ICNs) are

healthcare workers who spend the most time with complicated Covid-19 patients who need to be hospitalized in ICU and are exposed to Covid-19 at any time (Cevirme and Kurt, 2000). This situation poses a serious risk in terms of transmission ofthe disease to nurses.

During the Covid-19 pandemic period, nurses had to manage the care of an epidemic disease that they had never experienced before. In this process, they faced a high rate of infection by performing care practices with a high risk of transmission. In the report of the International Nurses Association, it is reported that 1500 nurses from 44 countries lost their lives due to Covid-19 (Cam & Dokunmaci, 2022). In addition, nurses were physically and psychologically affected due to reasons such as heavy workload during the pandemic, fear of being infected and transmitting the virus to their family, boredom, helplessness, lack of personal protective equipment, working periods up to 24 hours, insufficient rest periods, and lack of rest areas in accordance with standards (Baykara & Eyuboglu 2020). In this process, nurses could not go home due to the risk of infection, and they experienced anxiety and fearabout the care of their children, their own health and the health of their families (Celik et al.,2020). In addition, they were worried about infecting their dependent children and family elders with Covid-19 (Aktura & Ozden, 2020). In a study investigating the level of fear- anxiety regarding Covid-19, it was stated that 94.5% of the participants feared that their families and loved ones would catch the virus, and 92.4% feared catching the virus in a crowded environment (Dogan & Duzel, 2020). In another study conducted for healthcare workers, it was stated that the fear experienced during the pandemic was the fear of transmitting the virus to themselves and their families (Kumar, 2020). The fear of transmission experienced by nurses during the Covid-19 pandemic causes reluctance in the care given to patients and a decrease in the quality of care (Alharbi et al., 2020). The most important evidence of care is known as care behaviors (Gul & Dinc, 2018). Care behaviors refer to behaviors such as gestures, mimics, appearance, words, thoughts, touches, and communication with the patient that nurses use while providing care (Boz & Kol, 2020).

Determining the relationship between intensive care nurses' fear of Covid-19 and their care behaviors is very important in terms of patient care quality (Okuyan & Yesilyurt, 2020). It is also stated that there may be other outbreaks similar to Covid-19 outbreaks in the changing and developing world. At this point, it is thought that determining the fear of Covid-19, its relationship with care behaviors and the factors affecting them will increase the quality of careto be provided in possible future outbreaks. When the literature was examined, no study wasfound to investigate the relationship between the fear of Covid-19 and the care behaviors experienced by the patients with ICNs. The aim of this study was to determine the relationship between the fear of Covid-19 and care behaviors of the patients with ICNs.

## Materials and Methods

**Research a type, Population and Samples:** The descriptive and cross-sectional study was conducted between January 2021 and September 2023. The population of the study consisted of ICUs of public hospitals (state hospital, educational research-city hospital, university hospital) in seven regions of Turkey. The sample of the study, in which the convenience sampling method was used, consisted of 178 nurses working in hospitals of the specified type and who agreed to participate in the study. Data were collected online via Google Form. Since 7 nurses gave inconsistent answers to the questionnaire and scales, these data were excluded from the study and the research was completed with 171 nurses. In the postoc G*Power analysis performed at the end of the studyto test the adequacy of the sample size reached, it was determined that the sample (n=171) reached with a margin of error of 0.05 and an effect size of 0.26 was 86% representative of the universe.

**Data Collection Tools:** Research data were collected using the "*Nurse Descriptive Information Form", "Fear of Covid-19*

*Scale" and "Caring Behaviors Scale-24*". *Nurse Descriptive Information Form*: Nurse descriptive information form was created by the researchers in line with the literature reviewed (Dogan & Duzel, 2020; Tunc, & Krespi 2014; Altinoz & Demir, 2017; Oren & Selma, 2020; Hicdurmaz & Uzar, 2020). In the nurse descriptive information form, there are 16 questions questioning the sociodemographic and professional characteristics of the participants and the status of working in Covid-19.

***Covid-19 Fear Scale (FCV-19S)*:** The scale used to determine the participants' level of fear of Covid-19 was developed by Ahorsu et al., (2022). It was adapted into Turkish by Bakioglu et al., (2021).The unidimensional scale consists of 7 items. Each item in the scale is designed as a 5 -point Likert type (1 - strongly disagree to 5 - strongly agree). Possible scores from the scale rangefrom 7 to 35. The higher the score, the higher the participants' level of fear. The Cronbach's Alpha internal consistency coefficient was 0.88 in the study by Bakioglu et al., In this study, the Cronbach's Alpha value of the scale was found to be 0.89.

***Caring behaviors scale-24 (CBI-24*):** Developed in 1994 by Wolf et al. (1994), the "Caring Behaviors Scale-42" was revised by Wu et al. (2006) in 2006 and transformed into the shortform "Caring Behaviors Scale-24". Its Turkish validity and reliability was conducted by Kursun and Kanan (2012). The scale consists of 4 sub-dimensions: knowledge-skill (5 items=9,10,11,12,15), respectfulness (6 items=1,3,5,6,13,19), commitment (5 items=2,4,8,14) and assurance (8 items=16,17,18,20,21,22,23,24). The24-item scale is a 6-point Likert scale (6= always, 5= most of the time, 4= usually, 3= sometimes, 2= almost never, 1= never). The internal consistency of the scale ranged between 0.82-0.92 in subgroups and 0.96 in total. Asthe sub-dimension and total scale score increases, the level of patients' or nurses' perception of quality of care increases. In this study, the Cronbach's Alpha value of the scale was foundto be 0.94. Cronbach's Alpha values for the sub-dimensions were 0.96 for the respectfulness sub-dimension, 0.94 for the commitment sub-dimension, 0.96 for the knowledge-skill sub- dimension, and 0.70 for the assurance sub-dimension.

**Data Collection:** Data were collected online (*google form-https://forms.gle/vhvRwghuBt28ixYV8*) using different communication channels (whatsApp, e-mail, etc.). Participants were made to read the explanation about the research and the consent form before starting to fill in the online data collection tools**.**

**Data Evaluation:** The data obtained in this study were analyzed using the SPSS 21 package program. The data obtained from the descriptive information form were expressed as number, percentage, mean-standard deviation, minimum-maximum values. The normal distribution of the data was tested by Kolmogorov-Smirnov analysis. Mann-Whitney U test and Kruskall Wallis H test were used for comparisons between variables. Spearman-correlation analysis was used to determine the relationship between FCV-19S and CBI-24 mean scores. In the evaluation of the data, the significance level was 95% confidence interval and $p<0.05$ was considered significant.

**Ethical Aspects of the Research:** Before starting the study, approval was obtained from the Ministry of Health Scientific Research Platform. In addition, ethics committee approval (Decision No: 121-2020/03-12) was obtained from Amasya University Non-Interventional Clinical Research Ethics Committee. Informed consent form was presented to the participants before they started answering the questions. Participants who checked the "I agree to participate in this researchwith my own consent" button on the informed consent form were included in the study.

**Research Limitations and Generalizability:** The limitations of the study include the inability to interview the participants who volunteered to participate in the study face-to-face, the unwillingness of the nurses to conduct the surveys during the pandemic period, the problem of data security due to the fact that the study was conducted online, and the inconsistent responses to some questionnaires and their exclusion from the study. The results of this study can be generalized to nurses working

in the ICUs of hospitals in the specified regions.

**Results**

The findings of the study conducted to determine the relationship between FCV-19S of nurses working in the ICU and the CBI-24 are given below.

The distribution of the mean scores of the FCV-19S and CBI-24 according to the sociodemographic characteristics of the nurses is given in Table 1. It was determined that the mean scores of FCV-19S of female nurses and the mean scores of the knowledge-skill sub-dimension of married nurses were higher (p=0.004; p=0.037, respectively). It was determined that there was no significant difference between the regions where the nurses worked, having children, having any chronic disease and educational status and the mean scores of the FCV-19S and the mean scores of the CBI-24 (p>0.05) (Table 1).

The distribution of the mean scores of the FCV-19S and CBI-24 according to the occupational characteristics of the nurses is shown in Table 2. Nurses working in university hospitals had higher mean scores on the CBI-24 (p=0.01), respectfulness (p=0.043), commitment (p=0.012) and assurance subscale (p=0.011). There was no significant difference between the mean FCV-19S score and the mean scores of the CBI-24 and the length of time the participants worked in the ICU (p>0.05). Nurses working in the secondary ICU had lower mean scores on the CBI-24 (p=0.026), commitment (p=0.031) and assurance (p=0.004) subscales. Nurses who expressed dissatisfaction with their profession had higher mean FCV-19S scores (p=0.002). Nurses who stated that the time they allocated to patient care decreased during the pandemic had lower mean scores on CBI-24 (p=0.023), respectfulness (p=0.019), commitment (p=0.031), knowledge-skill (p=0.032) and assurance subscale (p=0.042). Nurses who stated that the increase in the number of patients did not affect nursing care had lower mean FCV-19S scores (p=0.043) (Table 2).

The distribution of the mean scores of the FCV-19S and CBI-24 according to thenurses' responses to Covid-19 is shown in Table 3. The FCV-19S score of the nurses who stated that they were afraid of catching Covid-19 was higher (p=0.0001). There is no significant difference between the mean scores of the CBI-24 (p>0.05). There is no significant difference between the status of receiving training on patient care for patients with Covid-19 and the status of receiving training on the use of protective equipment for Covid-19 and the mean FCV-19S and CBI-24scores (p>0.05). It was determined that nurses who stated that vaccination did not affect their fear of contracting Covid-19 had a higher mean score of FCV-19S (p=0.009), while there was no difference between the mean scores of the CBI-24 (p>0.05) (Table 3).

Table 4 shows the mean scores of the nurses on the FCV-19S scale and the CBI-24 and the scale minimum-maximum values. It was determined that the mean total score ofthe FCV-19S of the nurses participating in the study was 19.81±6.57 (min:7, max:35) and the mean score of the CBI-24 was 5.18±0.89 (min:2, max:8). When the mean scores of the subscales of the CBI-24 were examined, it was found that the mean score was 5.15±0.91 (min:2, max:6) for the respectfulness subscale, 5.07±0.91 (min:2, max:6) for the commitment subscale, 5.28±0.88 (min:2, max:6) for the knowledge and skills subscale and 5.21±1.07 (min:2, max:13) for the assurance subscale (Table 4).

The relationship between the mean FCV-19S scores of the nurses and the mean scores of the CBI-24 is given in Table 5. There was no significant correlation between the fear of Covid-19 scale scores and the scale scores of the CBI-24 (p>0.05). A significantand positive correlation was found between the fear of Covid-19 scale score and the mean scores of respectfulness, commitment and knowledge-skill sub-dimensions of the CBI-24 (r=0.159, p=0.038; r=0.174; p=0.023, r=0.203: p=0.008, respectively). As the FCV-19S score increases, respectfulness, commitment and knowledge-skill subscale scores also increase.

**Table 1. Distribution of nurses' mean FCV-19S and CBI-24 scores according to their sociodemographic characteristics**

| Variables | | | FCV-19S | CBI-24 Score | Respectfulness Subscale Scale Score | Commitment Subscale Scale Score | Knowledge-Skills Subscale Scale Score | Assurance Subscale Scale Score |
|---|---|---|---|---|---|---|---|---|
| | n | % | $\bar{X}$ ± SD | $\bar{X}$ ± SD | $\bar{X}$ ± SD | $\bar{X}$ ± SD | $\bar{X}$ ± SD | $\bar{X}$ ± SD |
| **Gender** | | | | | | | | |
| Woman | 144 | 84.2 | 20.43±6.46 | 5.20±0.88 | 5.16±0.89 | 5.10±0.90 | 5.29±0.87 | 5.22 ±1.10 |
| Male | 27 | 15.8 | 16.52±6.24 | 5.11±0.94 | 5.08±1.02 | 4.95±0.99 | 5.21±0.92 | 5.17±0.92 |
| **Test and p value** | | | Z=-2.897 **p=0.004** | Z=-0.030 p=0.976 | Z=-0.136 p=0.892 | Z=-0.544 p=0.587 | Z=-0.457 p=0.647 | Z=-0.168 p=0.867 |
| **Marital status** | | | | | | | | |
| Married | 107 | 62.6 | 20.41±6.49 | 5.24±0.82 | 5.22±0.85 | 5.14±0.88 | 5.38±0.82 | 5.22 ±0.84 |
| Single | 64 | 37.4 | 18.81±6.62 | 5.09±1.00 | 5.03±1.00 | 4.96±0.95 | 5.12±0.96 | 5.19±1.38 |
| **Test and p value** | | | Z=-1.614 p=0.106 | Z=-1.209 p=0.227 | Z=-1.472 p=0.141 | Z=-1.349 p=0.177 | Z=-2.082 **p=0.037** | Z=-1.159 p=0.246 |
| **Region worked** | | | | | | | | |
| Black Sea | 110 | 64.3 | 20.00±6.55 | 5.07±0.89 | 5.05±0.95 | 4.96±0.93 | 5.21±0.92 | 5.07 ±0.89 |
| Central Anatolia | 26 | 15.2 | 19.08±6.95 | 5.60±0.77 | 5.56±0.59 | 5.45±0.62 | 5.57±0.60 | 5.75±1.70 |
| Marmara + Aegean | 27 | 15.8 | 19.81±6.55 | 5.16±0.96 | 5.12±0.99 | 5.10±1.03 | 5.21±0.98 | 5.21 ±0.95 |
| Southeast+East+Mediterranean | 8 | 4.7 | 19.63±6.70 | 5.41±0.59 | 5.33±0.65 | 5.33±0.69 | 5.60±0.43 | 5.41±0.63 |
| **Test and p value** | | | $\chi^2$=0.474 p=0.925 | $\chi^2$=7.419 p=0.060 | $\chi^2$=6.577 p=0.087 | $\chi^2$=6.380 p=0.095 | $\chi^2$=3.683 p=0.298 | $\chi^2$=4.808 p=0.186 |
| **Child presence** | | | | | | | | |
| Yes | 76 | 44.4 | 19.70±6.75 | 5.25±0.72 | 5.22±0.77 | 5.12±0.82 | 5.43±0.71 | 5.25 ±0.72 |
| No. | 95 | 55.6 | 19.91±6.45 | 5.13±1.00 | 5.09±1.01 | 5.04±0.98 | 5.16±0.98 | 5.13±1.00 |
| **Test and p value** | | | Z=-0.219 p=0.826 | Z=-0.322 p=0.747 | Z=-0.408 p=0.684 | Z=-0.117 p=0.907 | Z=-1.370 p=0.171 | Z=-0.557 p=0.577 |
| **Presence of a chronic disease** | | | | | | | | |
| Yes | 23 | 13.5 | 21.87±6.78 | 5.32±0.87 | 5.30±0.91 | 5.22±0.91 | 5.45±0.85 | 5.32 ±0.88 |
| No. | 148 | 86.5 | 19.49±6.50 | 5.16±0.89 | 5.13±0.91 | 5.05±0.91 | 5.26±0.88 | 5.20±1.10 |
| **Test and p value** | | | Z=-1.503 p=0.133 | Z=-1.141 p=0.254 | Z=-1.051 p=0.293 | Z=-0.901 p=0.368 | Z=-1.305 p=0.192 | Z=-1.157 p=0.247 |
| **Education status** | | | | | | | | |
| High School-Associate Degree | 41 | 24.0 | 20.10±6.48 | 5.25±0.67 | 5.24±0.69 | 5.12±0.73 | 5.39±0.66 | 5.24 ±0.69 |
| License | 110 | 64.3 | 19.83±6.87 | 5.18±0.93 | 5.14±0.92 | 5.07±0.93 | 5.25±0.91 | 5.23±1.19 |
| Above Bachelor's Degree | 20 | 11.7 | 19.15±5.14 | 5.07±1.09 | 5.01±1.22 | 5.01±1.17 | 5.21±1.08 | 5.07 ±1.02 |
| **Test and p value** | 171 | 100 | $\chi^2$=0.253 p=0.881 | $\chi^2$=0.187 p=0.911 | $\chi^2$=0.044 p=0.978 | $\chi^2$=0.054 p=0.973 | $\chi^2$=0.139 p=0.933 | $\chi^2$=0.104 p=0.949 |

($\chi^2$: **Kruskal-Wallis. Z: *Mann Whitney U. $\bar{X}$ : Mean. SS: Standard deviation) (n=number, %: percentage)

**Table 2. Distribution of the mean FCV-19S and CBI-24 scores of nurses according to their professional characteristics**

| Variables | | | FCV-19S Score | CBI-24 Score | Respectfulness Subscale Scale Score | Commitment Subscale Scale Score | Knowledge-Skills Subscale Scale Score | Assurance Subscale Scale Score |
|---|---|---|---|---|---|---|---|---|
| | n | % | $X$ ± SD | $X$ ± SD | $X$ ± SD | $X$ ± SD | $X$ ± SD | $X$ ± SD |
| **Type of hospital worked** | | | | | | | | |
| University hospital | 13 | 7.6 | 19.31±9.43 | 5.70±0.46 | 5.67±0.47 | 5.66±0.51 | 5.74±0.44 | 5.72±0.45 |
| State hospital | 43 | 25.1 | 20.53±6.65 | 5.05±0.82 | 5.03±0.90 | 4.90±0.88 | 5.23±0.89 | 5.04±0.79 |
| Education research-City hospital | 115 | 67.3 | 19.60±6.20 | 5.17±0.93 | 5.14±0.94 | 5.07±0.93 | 5.25±0.90 | 5.22±1.19 |
| **Test and p value** | | | $\chi^2$=0.626 p=0.731 | $\chi^2$=9.114 **p=0.01** | $\chi^2$=6.306 **p=0.043** | $\chi^2$=8.879 **p=0.012** | $\chi^2$=4.757 p=0.093 | $\chi^2$=8.967 **p=0.011** |
| **Time worked in ICU** | | | | | | | | |
| Less than 1 year | 44 | 25.7 | 19.59±6.29 | 5.13±0.92 | 5.08±0.86 | 4.99±0.89 | 5.15±0.82 | 5.25±1.50 |
| 1-5 years | 60 | 35.1 | 19.28±6.28 | 5.33±0.81 | 5.30±0.88 | 5.24±0.85 | 5.45±0.83 | 5.33±0.80 |
| 6-10 years | 52 | 30.4 | 20.06±6.99 | 5.07±0.92 | 5.03±0.95 | 4.98±0.96 | 5.20±0.94 | 5.07±0.93 |
| 11-15 years | 15 | 8.8 | 21.73±7.27 | 5.15±10 | 5.20±1.04 | 5±1.03 | 5.27±1.01 | 5.13±10 |
| **Test and p value** | | | $\chi^2$=1.315 p=0.725 | $\chi^2$=3.734 p=0.292 | $\chi^2$=3.548 p=0.315 | $\chi^2$=2.908 p=0.406 | $\chi^2$=4.613 p=0.202 | $\chi^2$=3.322 p=0.345 |
| **Level of ICU worked** | | | | | | | | |
| 1st level intensive care unit | 12 | 7.0 | 19.17±7.63 | 5.52±0.46 | 5.49±0.51 | 5.40±0.53 | 5.68±0.44 | 5.51±0.48 |
| 2nd level intensive care unit | 52 | 30.4 | 19.92±6.25 | 4.95±0.90 | 4.93±0.97 | 4.83±0.93 | 5.08±0.97 | 4.95±0.90 |
| 3rd level intensive care unit | 107 | 62.6 | 19.83±6.66 | 5.26±0.90 | 5.22±0.90 | 5.16±0.91 | 5.33±0.85 | 5.31±1.17 |
| **Test and p value** | | | $\chi^2$=0.181 p=0.913 | $\chi^2$=7.294 **p=0.026** | $\chi^2$=5.322 **p=0**.070 | $\chi^2$=6.916 **p=0.031** | $\chi^2$=5.752 p=0.056 | $\chi^2$=6.444 **p=0.004** |
| **Professional satisfaction** | | | | | | | | |
| Satisfied | 24 | 14.0 | 16.50±4.77 | 5.40±0.75 | 5.40±0.79 | 5.30±0.82 | 5.34±0.77 | 5.49±0.74 |
| Partially satisfied | 88 | 51.5 | 19.10±6.07 | 5.11±0.94 | 5.07±0.92 | 5.0±0.92 | 5.20±0.92 | 5.16±1.26 |
| Not satisfied | 59 | 34.5 | 22.22±7.14 | 5.20±0.87 | 5.16±0.94 | 5.09±0.93 | 5.39±0.86 | 5.18±0.86 |
| **Test and p value** | | | $\chi^2$=12.845 **p=0.002** | $\chi^2$=3.037 p=0.219 | $\chi^2$=3.168 p=0.205 | $\chi^2$=2.425 p=0.297 | $\chi^2$=2.05 p=0.357 | $\chi^2$=5.755 p=0.056 |
| **Change in time allocated to patient care in apandemic** | | | | | | | | |
| Increased | 97 | 56.7 | 20.**11±6**.75 | 5.**24±0**.93 | 5.**23±0**.92 | 5.**15±0**.90 | 5.**31±0**.91 | 5.**25±1**.24 |
| Decreased | 34 | 19.9 | 19.**26±5**.42 | 4.**92±0**.78 | 4.**86±0**.85 | 4.**76±0**.88 | 5.**08±0**.81 | 4.**96±0**.76 |
| Unchanged | 40 | 23.4 | 19.**55±7**.10 | 5.**27±0**.85 | 5.**20±0**.92 | 5.**15±0**.94 | 5.**39±0**.85 | 5.**33±0**.81 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Test and p value** | | | $\chi^2$=0.44 p=0.803 | $\chi^2$=7.546 **p=0.023** | $\chi^2$=7.879 **p=0.019** | $\chi^2$=6.958 **p=0.031** | $\chi^2$=6.888 **p=0.032** | $\chi^2$=6.346 **p=0.042** |
| **The effect of the increase in the number of patients on nursing care** | | | | | | | | |
| Increased | 54 | 31.6 | 19.**89±6**.48 | 5.**33±0**.89 | 5.**26±0**.88 | 5.**18±0**.88 | 5.**44±0**.78 | 5.**42±1**.37 |
| Reduced | 93 | 54.4 | 20.**57±6**.69 | 5.**04±0**.94 | 5.**03±0**.98 | 4.**95±0**.98 | 5.**12±0**.98 | 5.**04±0**.93 |
| Did not affect | 24 | 14.0 | 16.**71±5**.51 | 5.**41±0**.56 | 5.**35±0**.60 | 5.**32±0**.64 | 5.**55±0**.51 | 5.**41±0**.60 |
| **Test and p value** | | | *$\chi^2$=6*.303 **p=0.043** | *$\chi^2$=4*.537 p=0.103 | *$\chi^2$=3*.012 p=0.222 | *$\chi^2$=3*.1 p=0.203 | *$\chi^2$=5*.433 p=0.066 | *$\chi^2$=3*.724 p=0.155 |

($\chi^2$: **Kruskal-Wallis, Z: *Mann Whitney U, $\bar{X}$ : Mean, SS: Standard deviation)

**Table 3. Distribution of nurses' mean FCV-19S and CBI-24 scores according to their responses to Covid-19**

| **Variables** | | | **FCV-19S Score** | **CBI-24 Score** | **Respectfulness Subscale Scale Score** | **Commitment Subscale Scale Score** | **Knowledge-Skills Subscale Scale Score** | **Assurance Subscale Scale Score** |
|---|---|---|---|---|---|---|---|---|
| | n | % | $\bar{X}$ **± SD** | $\bar{X}$ **± SD** | $\bar{X}$ **± SD** | $\bar{X}$ **± SD** | $\bar{X}$ **± SD** | $\bar{X}$ **± SD** |
| **Fear of catching Covid-19** | | | | | | | | |
| Yes | 118 | 69.0 | 22.03±5.97 | 5.20±0.94 | 5.17±0.94 | 5.11±0.92 | 5.28±0.92 | 5.23±1.18 |
| No. | 53 | 31.0 | 14.87±4.98 | 5.14±0.79 | 5.11±0.86 | 4.99±0.90 | 5.28±0.79 | 5.17±0.76 |
| **Test and p value** | | | U=908.5 **p=0.0001** | U=2964 p=0.584 | U=2944.5 p=0.534 | Z=-0.895 p=0.371 | Z=-0.602 p=0.547 | Z=-0.536 p=0.592 |
| **Status of receiving training on patient care for patients with Covid-19** | | | | | | | | |
| Yes | 71 | 41.5 | 18.87±6.34 | 5.17±0.85 | 5.13±0.88 | 5.08±0.85 | 5.28±0.86 | 5.19±0.86 |
| No. | 100 | 58.5 | 20.48±6.68 | 5.19±0.92 | 5.16±0.94 | 5.07±0.95 | 5.28±0.90 | 5.23±1.20 |
| **Test and p value** | | | Z=-1.052 p=0.293 | Z=-0.098 p=0.922 | Z=-0.568 p=0.57 | Z=-0.255 p=0.799 | Z=-0.006 p=0.995 | Z=-0.170 p=0.865 |
| **Status of receiving training on the use of protective equipment for Covid-19** | | | | | | | | |
| Yes | 103 | 60.2 | 19.15±6.16 | 5.22±0.79 | 5.22±0.83 | 5.11±0.86 | 5.33±0.80 | 5.23±0.79 |
| No. | 68 | 39.8 | 20.82±7.07 | 5.12±1.03 | 5.05±1.02 | 5.01±0.99 | 5.21±0.99 | 5.19±1.40 |
| **Test and p value** | | | Z=-1.245 p=0.213 | Z=-0.468 p=0.64 | Z=-0.757 p=0.449 | Z=-0.562 p=0.574 | Z=-0.373 p=0.709 | Z=-0.693 p=0.489 |
| **How vaccination affects fear of contracting Covid-19** | | | | | | | | |
| Increases | 10 | 5.8 | 20.80±7.94 | 4.86±1.33 | 4.97±1.38 | 4.84±1.27 | 4.92±1.40 | 4.75±1.32 |
| Reduces | 84 | 49.1 | 18.13±5.96 | 5.22±0.78 | 5.19±0.75 | 45.08±0.78 | 5.29±0.73 | 5.29±1.16 |
| Does not affect | 77 | 45.0 | 21.52±6.63 | 5.18±0.94 | 5.13±1.01 | 5.10±1 | 5.32±0.94 | 5.19±0.92 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Test and p value** | | | $\chi^2$=9.357 **p=0.009** | $\chi^2$=0.467 p=0.792 | $\chi^2$=0.057 p=0.972 | $\chi^2$=0.789 p=0.674 | $\chi^2$=1.123 p=0.245 | $\chi^2$=1.123 p=0.57 |

(n=number, %: percentage, $\chi^2$: **Kruskal-Wallis, Z: *Mann Whitney U, $\overline{X}$ : Mean, SD: Standard deviation)

**Table 4. Nurses' FCV-19S and CBI-24 mean scores and scale minimum-maximum values**

| **Scales** | | $\overline{X}$ ± **SD** | **Minimum-Maximum** |
|---|---|---|---|
| **FCV-19S** | | 19.81±6.57 | (7-35) |
| **CBI-24** | | 5.18±0.89 | (2-8) |
| **CBI-24 Subdimension** | Being Respectful | 5.15±0.91 | (2-6) |
| | Commitment | 5.07±0.91 | (2-6) |
| | Knowledge andSkills | 5.28±0.88 | (2-6) |
| | Assurance | 5.21±1.07 | (2-13) |

**Table 5. The relationship between the mean FCV-19S scores of the nurses and the mean scores of the CBI-24**

| **Spearman Correlation** | | | | | | |
|---|---|---|---|---|---|---|
| | | **Being Respectful Subdimension Scale Score** | **Commitment Subscale Scale Score** | **Knowledge-Skills Subdimension Scale Score** | **Assurance Subscale Scale Score** | **Total BDI-24 Score** |
| FCV-19S Score | r | .159* | .174* | .203** | .122 | .140 |
| | p | **.038** | **.023** | **.008** | .113 | .067 |

r:Spearman correlation coefficient, p<0.05 significant

## Discussion

The findings of the study, which was conducted to determine the relationship between intensive care nurses' fear of Covid-19 and care behaviors, were presented by predicting the findings of the research in the literature and the author's comments.

### Intensive Care Nurses' Fear of Covid-19

In this study, it was observed that the mean Covid-19 fear score of female nurses was higher than male nurses. When the literature is examined, it is seen that there are many studies supporting this finding (Labrague & de los Santos, 2021; Kaplan, Aktas & Kaya 2021; Naghneh et al., 2017). Higher fear rates among women may be associated with gender differences in sensitivity to stress. Because women show higher sensitivity to stress and it isreported that psychological problems may be more likely to occur as a result of experiencing stressful life events (Naghneh et al., 2017). In addition, it is thought that the higher number of female nurses participating in our study and the fact that women have caring roles such as being a mother and wife outside of work life contribute to the result in this direction.

As a result of this study, it was determined that nurses who expressed dissatisfaction with their profession had a higher fear of Covid-19. It is thought that nurses who are not satisfied with their profession cannot develop adequate coping mechanisms for emergency and crisis situations and experience high levels of fear. Nurses were assigned to Covid ICUs, where they had no previous experience, to meet the increasing care demands during the pandemic period. This situation caused nurses to experience fear (Yifan et al., 2020). During the pandemic period, the fact that nurses have to work in units that they do not want and donot find themselves sufficient will negatively affect their satisfaction, which is related to professional satisfaction. It has been reported that the professional satisfaction of nurses who choose their own working environment

can be positively affected (Altinoz & Demir, 2017). As a result of the study conducted by Labrague and Santos (2021), it was reported that fear of Covid-19 decreased job satisfaction and increased turnover. In addition, one of the reasons for dissatisfaction with their profession may be that the nurses included in the study work under difficult conditions in ICUs where patients infected with Covid-19 are cared for. Thefact that nurses are doing the most risky profession in the society in terms of the risk of transmission in a process full of uncertainties may have caused them to be dissatisfied with their profession. It is thought that this situation caused nurses to have a high level of fear ofCovid-19.

According to the results of the study, nurses who think that the increase in the number of patients reduces nursing care have a higher fear of Covid-19**.** In Poyraz's study investigating the effect of nurses' fear of Covid-19 and burnout on their care behaviors during the pandemic process, it was reported that the increase in the number of patients cared for increased the fear of Covid-19 (Poyraz, 2021). This situation also indicates that nurses caring for an increasing number of Covid-19 patients may face different problems that may negatively affect the quality of care. As a result of the study conducted by Lavoie-Tremblayet al. (2022) on job satisfaction and quality of care of nurses caring for Covid-19 patients, itwas observed that nurses caring for Covid-19 patients had high rates of chronic fatigue, lowjob satisfaction, and turnover intention. As a result of the study conducted by Ozdelikara and Yaman (2021), it was observed that 88% of nurses were afraid of getting infected while caring for Covid-19 patients. Being in contact with more infected patients in intensive care units, performing interventions with high risk of transmission such as aspiration and intubation, high mortality rate, and concern about becoming infected may have caused nurses to limit their care practices. As a result of the study conducted by Isikli et al. (2021), it wasobserved that the psychological status of nurses caring for Covid-19 patients was better than those who did not care for Covid-19 patients. It should not be forgotten that the first criterion of quality patient care is a healthy mental state. It is seen that taking measures to reduce the number of patients in ICUs during epidemic periods directly affects the quality of current patient care.

As a result of the study, it was determined that nurses who stated that vaccination did not affect their fear of getting Covid-19 had a high fear of Covid-19. Similarly, Baskaya and Kaya (2023) found that individuals' fear of Covid-19 had an effect on their positive attitude towards Covid-19 vaccine. It is thought that this situation prevents the perception that Covid- 19 can be protected from Covid-19 with vaccination. In addition, it is seen that being infected with Covid-19 is not the only source of fear of nurses in this process. In addition, being away from family and social support sources during the pandemic, the risk of transmission, witnessing the loss of caregivers or coworkers, increased roles and responsibilities, etc. caused nurses to experience fear (Crowe et al., 2021; Hicdurmaz & Uzar-Ozcetin, 2020 ).

**Caring behaviors of Intensive Care Nurses**

As a result of the study conducted by Naghneh et al. (2017), it was determined that maritalstatus affects care behaviors. In this study, it was determined that the knowledge-skill sub- dimension mean scores of married nurses were higher. There are also studies in the literature that contradict this finding. In Kaplan et al.'s (2021) study investigating the relationship between fear of Covid-19 transmission and nurses' attitudes towards the caregiver role, it was determined that nurses living alone had higher attitudes towards their caregiver role. Erenoglu et al. (2019) investigated nursing care behaviors and related factors and found that there was no relationship between marital status and care behaviors. In the study of Shalaby et al. (2018), it was stated that there was no relationship between marital status and care behaviors of ICNs.

As a result of this study, it was observed that the care behaviors of nurses working in university hospitals were higher than those working in state hospitals and education-research hospitals. Parallel to the result of our study, it was seen that this finding was

very little included in the literature and it was seen that the lack of nursing care with the type of hospital worked was due to lack of communication, insufficient labor and material resources (Nagneh et al., 2017). It is thought that the fact that university hospitals are better equipped and have sufficient personal protective equipment causes nurses to feel stronger and their care behaviors are positively affected.

As a result of this study, it was observed that the care behaviors of nurses working in 2nd level ICUs were at a lower level. Second-level ICUs serve patients who have not yet started organ failure and do not need respiratory support. During the pandemic period, patients received care and treatment in secondary intensive care units due to the increase inthe number of patients requiring advanced follow-up and treatment in tertiary ICUs (Erel, Yenigun & Turk, 2023). Second-level ICUs with insufficient technical infrastructure and systemic resources had to work beyond their capacity. As a result of the study conducted byKarabacak and Beydag, it was determined that 54% of nurses had to work with material and systemic deficiencies in the units they worked in during the pandemic period (Karabacak &Beydag, 2022). It is thought that nurses who have to care for severe patients outside the routine in 2nd level ICUs where infrastructure and organization are insufficient for Covid- 19 patient care may feel more powerless and inadequate and this situation may have negatively affected their care behaviors.

According to the results of this study, the care behaviors of nurses who thought that the time allocated to patient care decreased during the pandemic were found to be lower. Unlike this result, Vogelsang et al. (2022) concluded that although the time allocated by nurses to patients during the pandemic process was limited, their care behaviors were similar to the pre-pandemic period. Of course, it is also important in which phase of the pandemic this finding was obtained. It is known that nurses experience fear of becoming infected while providing care to patients in isolation rooms during the peak periods of the pandemic and experience deficiencies and ethical dilemmas in holistic care based on effective communication (Shin & Yoo, 2022). It is thought that the increase in the care needs of patients and the decrease in the time allocated to patient care due to all these negativities experienced in the care process negatively affect care behaviors.

**Nurses' Fear of Covid-19 and Its Relationship with Care Behaviors**

In this study, it was determined that there was no significant relationship between fear of Covid-19 and care behaviors. Similarly, in the study by Kaplan et al. investigating the relationship between fear of Covid-19 pandemic and nurses' attitudes towards their caregiving role, it was stated that there was no relationship between nurses' fear of Covid-19 and their caregiving roles. In addition, it was found that although nurses were psychologically negatively affected by the pandemic, they exhibited positive attitudes in their caregiving roles towards patients diagnosed with Covid-19 (Kaplan, Aktas, & Kaya, 2021). As a result of the study conducted by Ozdelikara and Yaman ( 2021), it was concluded that although nurses experienced fear while caring for Covid-19 patients, most of them performed care practices adequately. It should not be ignored that all these findings are affected by many factors. Factors such as the characteristics of the unit, the period of the pandemic, the number of personnel and working hours, etc. are likely to affect the care behaviors of nurses. Therefore, when evaluating care behaviors, evaluation should be made in the light of all these factors. However, despite the difficult conditions of the pandemic, itwas stated that nurses continued their commitment to the profession by working with a sense of duty and tried to meet patient needs (Kazanc & Karagozoglu, 2023).

**Conclusions:** As a result, it was concluded that there was no relationship between fear of Covid-19 and care behaviors of nurses working in ICU. In addition, it was observed that ICU nurses' thoughts about the care processes in the Covid-19 pandemic and some of their individual and professional characteristics affected their fear of Covid-19 and care behaviors. We believe that investigating the factors that are likely to affect the care behavior of nurses

caring for patients infected with Covid-19 in terms of different variables and revealing them with cause and effect relationships will shed light on many controversial findings in this regard.

## References


Ahorsu , D. K., Ying Lin, C., Iman, V., Saffari, M., D. Griffiths, M., & H. Pakpour, A. (2022). The fear of covid-19 scale: development and initial validation. *Internationa Journal of Mental Health and Addiction*, 20:1537-1545.

Akboga, O. S. (2020). New type of coronavirus (covid-19) outbreak. *Ordu University Journal of Nursing Studies*, 3(2), 153-162.

Aktura, S. C., & Ozden, G. (2020). Psychological effects of the pandemic: covid-19 nurses. *International Journal of Social Research*, 13(73) ,1147- 1151.

Alharbi J, Jackson D, Usher K. (2020 ). The potential for covid-19 to contribute to compassion fatigue in critical care nurses. *Journal of Clinical Nursing,* 00:1-3.

Altinoz, U., & Demir, S. (2017 ). Work perception, psychological distress and affecting factors in nurses working in intensive care. *Journal of Psychiatric Nursing*, 8(2):95-101.

Bakioglu, F., Korkmaz, O., & Ercan, H. (2021). Fear of covid-19 and positivity: mediating role of intolerance of uncertainty, depression, anxiety, and stress. *International Journal of Mental Health and Addiction*, 19:2369-2382.

Baskaya, E., & Kaya, C. (2023). The effect of fear of covid-19 on individuals' attitudes towards vaccines. *Dokuz Eylul University Faculty of Nursing Electronic Journal*, 16(1): 27-38

Baykara, Z. G., & Eyuboglu, G. (2020 ). Nursing care in the COVID-19 pandemic. *Gazi Journal of Health Sciences,* 9-17

Boz, I., & Kol, E. (2020). A literature review on care behaviors in intensive care nursing.*Journal of Intensive Care Nursing*, 24(1):32-38.

Crowe, S., Howard, A., Vanderspank-Wright, B., Gillis, P., McLeod, F., Penner, C., & Haljan, G. (63 (202). The effect of COVID-19 pandemic on the mental health of Canadian critical care nurses providing patient care during the early phase pandemic: A mixed method study. *Intensive & Critical Care Nursing*, 102999.

Cam, M. O., & Dokunmaci, H. (2022;). Psychosocial problems of healthcare workers caring for patients with COVID-19: nursing perspective. *Mediterranean Journal of Nursing*, 1(1): 36-47.

Cevirme, A., & Kurt, A. (2020). Covit-19 pandemic and its reflections on the nursing profession. *Eurasian Journal of Social and Economic Research (ASEAD*), 7(5), 46-52.

Celik , S. S., Atli Ozbas, A., Celik, B., Karahan, A., Bulut, H., Koc, G., Ozdemir Ozleyen, C. (2020). COVID-19 pandemic process: Turkish nurses association. *Koc University Journal of Education and Research in Nursing*, 17(3):279-83.

Dogan, M. M., & Duzel, B. (2020 ). Fear-anxiety levels in Covid-19. *Turkish Studies,*15(4), 739-752.

Erel, S., Yenigun, D., & Turk Ozterlemez, N. (2023). Evaluation of risk factors affecting mortality in patients followed up with a diagnosis of COVID-19 in a secondary intensive care unit: A single-center retrospective study. *Journal of Advanced Research in Social Sciences,* 31(1):100-107.

Erenoglu, R., Can, R., & Tambag, H. (2019). Nursing care behaviors and factors related to care behaviors; maternity home example. *Health and Society*, 79-88.

Gul, S., & Dinc, L. (2018 ). Examining the perceptions of patients and nurses towards nursing care. *Hacettepe University Journal of Nursing Faculty*, 5(3), 192-208.

Hicdurmaz, D., & Uzar-Ozcetin, Y. S. (2020). Protecting the mental health of nurses working on the front line in the COVID-19 pandemic and preventing mental trauma. *Hacettepe University Journal of Nursing Faculty*, 7, 1-7.

Kaplan, E., Aktas, M., & Kaya, H. (2021 ). The relationship between fear of COVID- 19 pandemic and nurses' attitudes towards the caregiver role. *Health Sciences University Journal of Nursing*, 3(3), 135-140.

Karabacak, Z., & Beydag, K. (2022). Psychological resilience level and affecting factors of nurses working in pandemic hospitals. *Health and Society*, 32 (2) 145-151.

Kazanc, S., & Karagozoglu, S. (2023). Experiences and thoughts of nurses working inCovid-19 clinic: a qualitative study. *Dokuz Eylul University Faculty of Nursing Electronic Journal*, 16(2): 156-172.

Kiraner, E., Terzi B. (2020). Intensive care nursing in the Covid-19 pandemic process, *Journal of Intensive Care Nursing*, 24,83-88

Kumar J, K. M. (2020 ). Predictive factors associated with fear faced by healthcare workers during covid-19 pandemic:a questionnaire-based study. *Cureus 12(8): 9741*.

Kursun, S., & Kanan, N. (2012 ). Validity and reliability study of the Turkish form of the

care behaviors scale-24. *Anatolian Journal of Nursing and Health Sciences*, 15:4.

Okuyan, C. B., Gunes, E., & Yesilyurt, E. (2020). Experiences of a nurse providing nursing care to a COVID-19 positive patient, *Online Turkish Journal of Health Sciences,* 5(4):705-708.

Oren, B., & Selma, D. (2020). Problems faced by nurses working in intensive care units. *Journal of Intensive Care Nursing*, 24(3):170-183.

Ozdelikara, A., & Yaman, E. (2021). Determination of health anxiety and unmet nursing care needs of nurses working in the pandemic process. *Samsun Journal of Health Sciences*, 6(2):383-399.

Isikli, A. G., Sen, H., & Soydas, D. (2021). Evaluation of psychological resilience, professional satisfaction and fear levels of nurses with and without COVID-19 diagnosis. *Journal of Psychiatric Nursing*, 12(4):281-287.

Naghneh, MHK., Tafreshi, MZ., Naderi, M., Shakeri, N., Bolourchifard, F., Goyaghaj,NS. (2017). The relationship between organizational commitment and nursing care behavior. *Electronic Physician*, 9, (7), 4835-4840

Labrague, L. J., & A. de los Santos, J. (2021 ). Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *Journal ofNursing Management,* 29:395-403

Lavoie-Tremblay, M., Tafreshi, M. Z., Nederi, M., Shakery, N., et all. (2022). Influenceof caring for COVID-19 patients on nurse's turnover, work satisfaction and quality of care. *J Nurs Manag.* 30:33-43.

Sin S., & Yoo H.J. (2022). Frontline nurses' caring experiences in COVID-19 units: A qualitative study. *Journal of Nursing Management*, 30:1087-1095.

Shalaby, S. A., Fahad Janbi, N., Khalid Mohammed, K., & Mohammed Al-harthi, K.(2018,). Assessing the caring behaviors of critical care nurses. *Journal of Nursing Educationand Practice*, 8,(10),77-85.

Singhal, T. (2020). A Review of coronavirus disease-2019 (covid-19). *The Indian Journal of Pediatrics*, 87(4):28286.

Tosun, H. S., & Sert, H. (2021). Experiences of a nurse who cares for COVID-19 patients and who herself had covid-19 infection. *SAUHSD*, 4(2):104-111

Tunc, P., Gitmez, A., & Krespi Boothby, M. (2014). Investigation of emotional labor strategies in intensive care and inpatient services in terms of empathic tendency. *Anatolian Journal of Psychiatry*, 15:45-54.

Yifan, T., Ying, L., Chunhong, G., Jing, S., Rong, W., Zhenyu, L., Peihung, L. (2020). Symptom Cluster of ICU Nurses Treating COVID-19 Pneumonia Patients in Wuhan, China. *Journal of Pain and Symptom Management*, 49-53.

Shalaby, S. A., Fahad Janbi, N., Khalid Mohammed, K., & Mohammed Al-harthi, K. (2018,). Assessing the caring behaviors of critical care nurses. *Journal of Nursing Education and Practice*, 8, (10),77-85.

Wolf, ZR., Giardino, ER., Osborne PA., Ambrose, MS. (1994). Dimensions of Nurse Caring. Image J Nurs Sch., 26:107-11.

Wu, Ying., Larrabee, June H., Putman, Heidi P. (2006). Caring behaviors inventory: a reduction of the 42-item instrument. *Nursing Research,* 55(1), 18-25.