ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

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# Investigation of the Relationship Between Coronaphobia and Compliance with Isolation Precautions of Nurses in Combating the COVID-19 Pandemic: A Cross-Sectional Study

## COVID-19 Pandemisi ile Mücadelede Hemşirelerin İzolasyon Önlemlerine Uyumu ile Koronafobi Arasındaki İlişkinin Araştırılması: Kesitsel Çalışma

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**ABSTRACT Objective:** This study aimed to investigate of the relationship between coronaphobia and compliance with isolation precautions of nurses on the front line in the fight combating coronavirus disease-2019 (COVID-19) pandemic. **Material and Methods:** This cross-sectional study was conducted via a web-based questionnaire with 614 nurses working in the pandemic wards from July to November 2020. Data were obtained by using the Personal Information Form, the COVID-19 Phobia Scale, and the Isolation Precautions Compliance Scale. **Results:** The average age of the nurses was 28.13±5.32 years and 71.2% of them were women. The COVID-19 Phobia Scale mean score of the participants was found to be 55.15±13.26, and the mean score of the Isolation Precautions Compliance Scale was 74.18±9.64. Isolation Precautions Compliance Scale total mean scores of the nurses were found to be significantly positively associated with psychological sub-scale scores ($p<0.001$) on COVID-19 Phobia Scale; and significantly negatively associated with psycho-somatic sub-scale scores ($p<0.001$) and economic sub-scale scores ($p<0.001$). However, no statistically significant association was found between the COVID-19 Phobia Scale total mean scores and the Isolation Precautions Compliance Scale total mean scores of the nurses ($p=0.084$). **Conclusion:** This study showed that there was no relationship between nurses' coronavirus phobia and compliance with isolation measures. However, as nurses' psychological phobia related to coronavirus increased, their compliance with isolation measures increased, and as their psychosomatic and economic phobias increased, their compliance with isolation measures decreased.

**Keywords:** COVID-19; isolation; nursing; pandemics; phobia

**ÖZET Amaç:** Bu çalışmada, COVID-19 pandemisi ile mücadelede ön saflarda yer alan hemşirelerin izolasyon önlemlerine uyumları ile koronafobi arasındaki ilişkinin araştırılması amaçlandı. **Gereç ve Yöntemler:** Bu kesitsel çalışma, Temmuz-Kasım 2020 tarihleri arasında pandemi servislerinde çalışan 614 hemşire ile web tabanlı anket aracılığıyla yapıldı. Veriler, Kişisel Bilgi Formu, COVID-19 Fobisi Ölçeği ve İzolasyon Önlemlerine Uyum Ölçeği kullanılarak elde edildi. **Bulgular:** Hemşirelerin yaş ortalaması 28,13±5,32 olup %71,2'si kadındır. Katılımcıların COVID-19 Fobisi Ölçeği puan ortalaması 55,15±13,26, İzolasyon Önlemlerine Uyum Ölçeği puanı ortalaması 74,18±9,64 olarak bulundu. Hemşirelerin İzolasyon Tedbirlerine Uyum Ölçeği toplam puan ortalamaları ile COVID-19 Fobisi Ölçeği psikolojik alt ölçek puanları ($p<0.001$); psiko-somatik alt ölçek puanları ($p<0.001$) ve ekonomik alt ölçek puanları ($p<0.001$) ile anlamlı derecede negatif ilişkilidir. Ancak hemşirelerin COVID-19 Fobisi Ölçeği toplam puan ortalamaları ile İzolasyon Önlemlerine Uyum Ölçeği toplam puan ortalamaları arasında istatistiksel olarak anlamlı bir ilişki bulunmadı ($p=0,084$). **Sonuç:** Bu çalışma, hemşirelerin koronavirüs fobisi ile izolasyon önlemlerine uyum arasında bir ilişki olmadığını göstermektedir. Ancak hemşirelerin koronavirüse bağlı psikolojik fobileri arttıkça izolasyon tedbirlerine uyumları artmakta, psikosomatik ve ekonomik fobileri arttıkça izolasyon tedbirlerine uyumları azalmaktadır.

**Anahtar Kelimeler:** COVID-19; fobi; hemşirelik; izolasyon; pandemi

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On December 31, 2019, coronavirus 2019 was detected as "pneumonia of undetermined etiology" in Wuhan, Hubei Province, China, and was later called coronavirus disease-2019 (COVID-19). The World Health Organization (WHO) labeled the virus a pandemic (global epidemic) on March 11, 2020, as a result of the virus' quick spread to neighboring nations.[1] During the pandemic term, over 65 million cases and 1.5 million fatalities have been stated. This report belongs to WHO status.[2] Pandemics are known to cause many physical and mental problems as well as many loses of lives.[3,4] It is reported that healthcare professionals, who have a key role in this process, are among the groups with the highest potential to be affected, as in pandemics in the past, and hundreds of them died due to the pandemic.[3,5,6]

Phobias are anxiety disorders that are characterized by a persistent, intense fear of a substance or circumstance.[7] Phobias brought on by environmental causes can be triggered by disasters like the COVID-19 epidemic. People may associate objects or situations with the COVID-19 pandemic and develop abnormal cognitive, emotional, or behavioral responses to them. By interfering with people's daily activities, the COVID-19 pandemic causes anxiety and phobic reactions, or the emergence of coronavirus phobia.[8] Stress, depression, psychosomatic, and psycho-social disorders are among the major physiological, social, and economic consequences of the COVID-19 epidemic in many nations.[9,10]

Healthcare professionals are at high risk of transmission and accounts for 10.1% of COVID-19 positive cases worldwide.[11] It is known that healthcare professionals are exposed to physical and psychological stress due to prolonged exposure to infected patients, high risk of morbidity, overworking, feeling tired, having to comply with strict isolation precautions, lack of personal protective equipment and not being informed about the necessary issues.[6,12,13] Besides, fear of infecting family members, social stigma, coworkers affected by and lost due to pandemic cause high stress and anxiety in healthcare professionals, thus limiting their coping mechanisms.[12,14,15]

It is thought that nurses coping behaviors will affect their compliance with isolation precautions, which are critical in the management of the pandemic.[12] It is known that the virus is transmitted from person to person by droplets, contact and in some cases by aerosol, and therefore it is stated that standard droplet and contact isolations should be applied to all COVID-19-suspected cases.[16,17] It is of great importance for nurses who may come into close contact with possible or certain COVID-19 cases to comply with strict isolation precautions and necessary personal protective equipment (gloves, gowns, N95 I FFP2 mask, face protection, goggles, overalls).[16-18]

In studies conducted for health professionals, it has been reported that stress, anxiety, and fear are at high levels, especially in nurses, followed by doctors and other healthcare professionals.[13,19,20] In case of coronaphobia arising from fear of COVID-19, individuals can indicate overstated and out of ordinary behaviors as a consequence of excessive focus on COVID-19 pandemic and ways to protect from the virus.[21] Mental health of individuals experiencing fear, anxiety, desperation, hopelessness, uncertainty and stress due to the pandemic might have negative effect on strict isolation precautions that must be followed.[22] The essential point about this study is that considering the connection between coronaphobia and compliance with isolation procedures among nurses fighting the COVID-19 epidemic. Sheding light on nursing care practices and the literature are anticipated about the information mentioned in this survey.

## MATERIAL AND METHODS

### STUDY DESIGN AND SETTING

Between July and November 2020, 614 nurses from 11 training and research hospitals and two state hospitals in İstanbul associated with the Republic of Türkiye Ministry of Health participated in this cross-sectional study.

### STUDY SAMPLE

For the study's sample computation, the G*Power 3.1 version (University of Kiel, Germany) was employed. Tayran and Ulupınar study estimated the sample reflecting the population as 248 nurses with 0.05 significant level, 0.41 effect size, and 95% power ratio based on the mean scores of the nurses'

compliance with isolation precautions.[23] The study comprised 614 nurses working in pandemic wards who agreed to participate in the study and completed the questionnaire.

## DATA COLLECTION TOOLS

Data were obtained from the participants using the Personal Information Form, the COVID-19 Phobia Scale (C19P-S), and the Isolation Precautions Compliance Scale.

### Personal Information Form

This form includes questions about the participants' sociodemographic factors (age, gender, educational attainment, marital status, professional working hours, unit of employment), as well as close contact with the COVID-19 disease.[24]

### C19P-S

Arpaci et al. created this scale. The scale devised to assess the phobia that can develop in response to coronavirus contains a total of 20 questions. Levels of the five-point Likert scale are rated between 1 and 5. 1 means that "Strongly disagree" and 5 means that "Strongly agree." This scale is divided into four sections: psychological, psycho-somatic, economic, and social. Sub-scale scores are calculated by adding the total scores of the answers given to the items in that sub-scale, whereas the scale total score is calculated by adding the sub-scale scores and varies from 20 to 100 points. Higher scores indicate more severe subscales as well as total coronaphobia. Cronbach's alpha for the scale was 0.926.[8] About this examination, it is discovered that the Cronbach alpha multiple of the scale was 0.93. The Cronbach alpha coefficient of the psychological sub-scale was 0.80, the psychosomatic sub-scale was 0.88, the social sub-scale was 0.83, and the economic sub-scale was 0.84.

### The Isolation Precautions Compliance Scale

Tayran and Ulupınar created this scale to assess nurses' and physicians' adherence to isolation precautions. The scale is a five-point Likert type, including 18 positive and negative statements. 1=Strongly disagree, 2=Disagree, 3=Don't know, 4=Agree, 5=Strongly agree. Items 18, 22, 24, and 34 on the scale are negative statements and are scored in reverse. The scale's overall score ranges from 18 to 90 points. The greater the scale score, the higher the level of conformity. The scale's Cronbach's alpha coefficient was 0.926.[23] The Cronbach's alpha coefficient of this study was 0.93.

## DATA COLLECTION

Research data were collected online with a data collection form created on Google Forms. The link to the questionnaire was shared with the directors and responsible nurses of the hospitals and the volunteers were provided with the form to fill out. In the first section of the survey, attendees were given information about the study's goal, and only those who agreed to fill out the questionnaire had their data gathered. It took about 10 minutes for the participants to fill out the form.

## DATA ANALYSIS

The statistical analysis is made by using R program, version 2.15.3 (R Core Team, 2013, Vienna, Austria). The study's data was reported using the following parameters: minimum, maximum, mean, standard deviation, median, first quartile, third quartile, frequency, and percentage. The conformance of the quantitative data to the normal distribution was examined using the Shapiro-Wilk test and graphical analysis. The test for independent groups was used to compare variables with normal distributions in the two groups. When evaluating variables having a normal distribution over more than two groups, a uni-directional analysis of variance was applied, and the Bonferroni test was employed to identify the source of significance in the event of a significant result. Intergroup differences in variables that did not exhibit a normal distribution have been evaluated and, on this part, it is appealed to the Kruskal-Wallis test, and the Dunn-Bonferroni test. When evaluating variables across groups that did not exhibit a normal distribution, the Kruskal-Wallis test was utilized, and if significance was found, the Dunn-Bonferroni test was used to identify the source of significance. The strength of the association between the quantitative variables was assessed using Pearson correlation analysis. The scales' internal consistency levels were determined using the Cronbach alpha coefficient. The accepted level of statistical significance was $p<0.05$.

## ETHICAL CONSIDERATION

To apply the research and collect data, the first approval was obtained from the Scientific Research Platform established by the Republic of Türkiye Ministry of Health (no: 2020-06-02T22_38_18). Afterward, ethical approval was obtained from the University of Health Sciences Hamidiye Scientific Research Ethics Committee (date: June 26, 2020, no: 20/232). Institutional permissions were obtained from the hospital administration to which the researcher was affiliated and from the İstanbul Governorship Provincial Health Directorate. It was explained to the participants that the obtained data would not be shared with anyone in the first part of the questionnaire form and the consent of the volunteers was obtained. Permits were obtained for the COVID-19 Phobia and the Isolation Precautions Compliance Scales applied to the participants in the study. The research was conducted in accordance with scientific publication ethics and the Principles of the Declaration of Helsinki.

## RESULTS

The average age of the nurses participating in the study was 28.13±5.32 years and 71.2% (n=437) were women. About fifty-five percent of the participants were undergraduates, 63.8% were single, 63.0% had a professional working period of 1-5 years, and 35.3% were working in the intensive care unit. It was found that 81.1% of the nurses were in close contact with the suspected COVID-19 patient (oral care, aspiration, etc.), 75.9% were in close contact with the patient diagnosed with COVID-19 and 67.6% had colleagues who tested positive for COVID-19 (Table 1).

**TABLE 1:** Distribution of the participants' the descriptive characteristics (n=614).

| Characteristics | Minimum-Maximum | Mean (SD) |
|---|---|---|
| Age (year) | 19-55 | 28.13 (5.32) |
| | n | % |
| Sex | | |
| Female | 437 | 71.2 |
| Male | 177 | 28.8 |
| Educational status | | |
| High school | 59 | 9.6 |
| Associate degree | 59 | 9.6 |
| Bachelor's degree | 340 | 55.4 |
| Master's degree | 136 | 22.1 |
| PhD | 20 | 3.3 |
| Marital status | | |
| Single | 392 | 63.8 |
| Married | 222 | 36.2 |
| Professional working years | | |
| <1 year | 39 | 6.4 |
| 1-5 years | 387 | 63.0 |
| 6-10 years | 108 | 17.6 |
| 11-15 years | 44 | 7.2 |
| >15 years | 36 | 5.9 |
| Working unit | | |
| Emergency unit | 96 | 15.6 |
| Operating theatre unit | 82 | 13.4 |
| Outpatient unit | 85 | 13.8 |
| Inpatient unit | 134 | 21.8 |
| Intensive care unit | 217 | 35.3 |
| Close contact with the suspected COVID-19 patient (oral care, aspiration, intubation, etc.) | | |
| Yes | 498 | 81.1 |
| No | 116 | 18.9 |
| Close contact with the diagnosed COVID-19 patient (oral care, aspiration, intubation, etc.) | | |
| Yes | 466 | 75.9 |
| No | 148 | 24.1 |
| The presence of individuals around who are COVID-19 positive | | |
| Exists among my family member | 71 | 11.6 |
| I have my colleagues | 415 | 67.6 |
| Exists among those I know from afar | 84 | 13.7 |
| No | 44 | 7.2 |

SD: Standard deviation.

It was found that the average score of the C19P-S was 55.15±13.26 and the coronaphobia was below the normal range. The psychological sub-scale mean score was 18.97±4.33, psycho-somatic sub-scale mean score was 12.07±3.95, social sub-scale mean score was 14.36±3.88, and economic sub-scale mean score was 9.75±3.24. It was found that psychological, economic, and social sub-scales were within normal range, and the psych-somatic sub-scale was above normal. The mean score of the nurses' Isolation Precautions Compliance Scale was found to be 74.18±9.64 and precautions compliance was found to be improved.

Average age of nurses was found to be statistically positively associated to C19P-S total score (p=0.001). psychological (p=0.002), social (p=0.001)

and economic (p=0.002) sub-scale scores. Psychological sub-scale scores of women were found to be significantly higher (p=0.001). A statistically significant difference was found between the educational status of the nurses and the total score of the C19P-S (p<0.001), psycho-somatic (p<0.001), and economic (p<0.001) sub-scale scores. Psychological and social sub-scale scores of married individuals were found to be significantly higher (p=0.024, p=0.008, respectively). There was a statistically essential correlation between the unit in which they worked and the total score on the C19P-S (p=0.047), psychosomatic (p=0.011), and economic (p=0.015) subscales. C19P-S total score (p=0.006, p=0.005, respectively), psycho-somatic (p<0.001, p<0.001, respectively), and economic (p<0.001, p<0.001, respectively) sub-scale scores of nurses coming into close contact with suspected COVID-19 and COVID-19 diagnosed patients were found to be significantly higher. A statistically significant difference was found between the presence of individuals who tested positive for COVID-19 in their environment and the total score of the C19P-S (p=0.001), psycho-somatic (p<0.001), and economic (p<0.001) sub-scale scores (Table 2).

The average age of the nurses and the overall Isolation Precautions Compliance Scale score were shown to be significantly positively associated (p=0.001). Women's scores on the Isolation Precautions Compliance Scale were significantly higher than men (p<0.001). The Isolation Precautions Compliance Scale total score and the educational status of the nurses were shown to differ statistically substantially (p<0.001). The total score of the Isolation Precautions Compliance of nurses having master's degree was significantly lower than nurses having associate degree and bachelor's degree. The total score of the Isolation Precautions Compliance Scale was considerably higher among married people (p=0.005). There was a statistically difference between the total score of the Isolation Precautions Compliance Scale and professional working years (p=0.001). The Isolation Precautions Compliance Scale total score of the nurses working for 15 years or more was significantly higher than the nurses working for less than 1 year and less than 5 years. The unit they worked in and the total score of the Isolation Precautions Compliance Scale differed statistically (p=0.014). The Isolation Precautions Compliance Scale total score of nurses working in the operating theatre unit was significantly lower than nurses working in inpatient unit and intensive care unit. Total score of the nurses' Isolation Precautions Compliance Scale, who were in close contact with the patient diagnosed with COVID-19, was found to be significantly lower (p=0.006). A statistically significant difference was found between the presence of individuals who were positive for COVID-19 in their environment and the total score of the Isolation Precautions Compliance Scale (p=0.022) The total score of the Isolation Precautions Compliance Scale of individuals who have COVID-19 among those they know from afar was significantly higher than those among their family members (Table 3).

The total score of the nurses' Isolation Precautions Compliance Scale and the psychological subscale score (r=0.208, p<0.001) had a statistically significant positive correlation, while the psycho-somatic (r=-0.289. p<0.001) and economic (r=-0.235, p<0.001) sub-scale scores had a statistically significant negative correlation. There was no statistically significant correlation between the total C19P-S score and the total Isolation Precautions Compliance Scale score (r=-0.070, p=0.084) (Table 4).

## DISCUSSION

The COVID-19 pandemic affected the entire world and caused many physical and mental problems.[4] According to Taylor, psychological vulnerability factors such as the inability to tolerate uncertainty, vulnerability to illness, and personal anxiety and fear play a role in the formation of coronaphobia.[25] It is reported by Lai et al. that nurses have higher levels of depression, anxiety, stress, and fear of coronavirus disease compared to other health professionals.[13] The average score of the nurses' C19P-S was found to be 55.15±13.26, and it was found that the coronaphobia level in nurses was below the normal range, but the phobia level was above normal in the psycho-somatic sub-scale. In the study in which Mora-Magaña et al. evaluated coronaphobia using the Coronavirus Anxiety Scale-Healthcare version, it was stated that the

**TABLE 2:** Comparison of the participants' the descriptive characteristics and the COVID-19 Phobia Scale scores (n=614).

| | Psychological | Psycho-somatic | Economic | Social | Total |
|---|---|---|---|---|---|
| Age (year) | | | | | |
| Mean (SD)=28.13 (5.32) | | | | | |
| r | 0.123 | 0.070 | 0.126 | 0.132 | 0.131 |
| p | 0.002** | 0.081 | 0.002** | 0.001** | 0.001** |
| Sex | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Female | 19.32 (4.40) | 12.04 (3.87) | 9.69 (3.28) | 14.5 (3.95) | 55.54 (13.31) |
| Male | 18.1 (4.04) | 12.16 (4.15) | 9.9 (3.14) | 14.03 (3.69) | 54.19 (13.13) |
| t | 3.311 | -0.361 | 0.733 | 1.346 | 1.143 |
| p | 0.001** | 0.718 | 0.464 | 0.179 | 0.254 |
| Educational status | Med (minimum-maximum) | Med (minimum-maximum) | Med (minimum-maximum) | Med (minimum-maximum) | Med (minimum-maximum) |
| High school[1] | 19 (16-23) | 12 (10-15) | 9 (8-12) | 15 (11-17) | 57 (47-64) |
| Associate degree[2] | 18 (16-21) | 10 (7-11) | 8 (7-10) | 13 (10-16) | 48 (43-56) |
| Bachelor's degree[3] | 19 (16-21.5) | 11 (10-15) | 9 (7-12) | 14 (12-17) | 53 (45.5-62) |
| Master's degree[4] | 18 (17-21) | (11-15) | 11 (9-12) | 15 (13-16) | 58.5 (52.5-64) |
| PhD degree[5] | 20.5 (18-23) | 15 (12-18) | 11 (9-12) | 15.5 (13.5- 17.5) | 61 (51.5-70) |
| $\chi^2$ | 6.297 | 59.397 | 37.475 | 8.369 | 26.063 |
| p | 0.178 | <0.001** | <0.001** | 0.079 | <0.001** |
| Post-hoc | | 2<1, 2<3, 2<4, 2<5, 3<4, 3<5 | 1<4, 2<4, 2<5, 3<4 | | 2<4, 2<5, 3<4 |
| Marital status | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Single | 18.67 (4.25) | 12.04 (4.11) | 9.71 (3.20) | 14.05 (3.86) | 54.48 (13.35) |
| Married | 19.49 (4.44) | 12.13 (3.66) | 9.81 (3.32) | 14.91 (3.85) | 56.35 (13.05) |
| t | -2.260 | -0.279 | 0.364 | -2.656 | -1.681 |
| p | 0.024* | 0.780 | 0.716 | 0.008* | 0.093 |
| Professional working years | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| <1 year[1] | 18.82 (4.56) | 10.56 (4.82) | 8.95 (3.39) | 13.56 (4.64) | 51.9 (15.5) |
| 1-5 years[2] | 18.8 (4.26) | 12.27 (4.04) | 9.74 (3.17) | 14.32 (3.82) | 55.13 (13.12) |
| 6-10 years[3] | 19.49 (4.32) | 12.06 (3.75) | 10.08 (3.4) | 14.63 (3.84) | 56.26 (13.06) |
| 11-15 years[4] | 18.86 (3.99) | 12.05 (3.00) | 9.64 (2.89) | 14.89 (3.43) | 55.43 (11.3) |
| >15 years[5] | 19.47 (5.32) | 11.72 (3.30) | 9.81 (3.71) | 14.31 (4.27) | 55.31 (15.12) |
| F | 0.674 | 1.733 | 0.897 | 0.756 | 0.780 |
| p | 0.610 | 0.141 | 0.465 | 0.555 | 0.538 |

*p<0.05; **p<0.01, Bonferroni test and Dunn-Bonferroni test were used as post-hoc test; SD: Standard deviation; r: Pearson correlation coefficient; t: Independent groups t-test; $\chi^2$: Kruskal-Wallis test; F: One-way variance analysis.

**TABLE 2:** Comparison of the participants' the descriptive characteristics and the COVID-19 Phobia Scale scores (n=614) *(devamı)*.

| | Psychological | Psycho-somatic | Economic | Social | Total |
|---|---|---|---|---|---|
| Working unit | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Emergency unit[1] | 18.59 (4.81) | 11.94 (3.92) | 9.54 (2.87) | 14.19 (3.74) | 54.26 (13.55) |
| Operating theatre unit[2] | 18.66 (3.08) | 13.33 (3.84) | 10.74 (3.14) | 14.83 (3.46) | 57.56 (11.60) |
| Outpatient unit[3] | 19.54 (5.19) | 12.31 (4.27) | 10.08 (3.54) | 14.75 (4.35) | 56.68 (15.11) |
| Inpatient unit[4] | 19.62 (4.37) | 12.15 (4.28) | 9.72 (3.49) | 14.87 (4.11) | 56.36 (14.00) |
| Intensive care unit[5] | 18.62 (4.08) | 11.52 (3.57) | 9.35 (3.09) | 13.8 (3.69) | 53.29 (12.29) |
| F | 1.766 | 3.294 | 3.120 | 2.295 | 2.430 |
| p | 0.134 | 0.011* | 0.015* | 0.058 | 0.047* |
| Post-hoc | | 5<2 | 5<2 | | 5<2 |
| Close contact with the suspected COVID-19 patient (oral care, aspiration, intubation, etc.) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Yes | 19.04 (4.16) | 12.42 (3.95) | 9.97 (3.19) | 14.42 (3.75) | 55.86 (13.02) |
| No | 18.64 (5.03) | 10.59 (3.60) | 8.78 (3.30) | 14.14 (4.39) | 52.14 (13.93) |
| t | -0.808 | -4.842 | -3.619 | -0.635 | -2.733 |
| p | 0.420 | <0.001** | <0.001** | 0.526 | 0.006** |
| Close contact with the diagnosed COVID-19 patient (oral care, aspiration, intubation, etc.) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Yes | 18.97 (4.16) | 12.55 (3.97) | 10.11 (3.14) | 14.37 (3.71) | 56.00 (13.00) |
| No | 18.96 (4.86) | 10.58 (3.51) | 8.59 (3.31) | 14.35 (4.39) | 52.49 (13.76) |
| t | 0.024 | -5.743 | -5.065 | 0.044 | -2.823 |
| p | 0.981 | <0.001** | <0.001** | 0.965 | 0.005** |
| The presence of individuals around who are COVID-19 positive | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) | Mean (SD) |
| Exists among my family members[1] | 17.65 (4.35) | 11.94 (3.57) | 9.75 (2.93) | 13.46 (3.48) | 52.80 (12.36) |
| Exists among my colleagues[2] | 19.25 (4.11) | 12.64 (3.96) | 10.12 (3.14) | 14.62 (3.75) | 56.62 (12.90) |
| Exists among those I know from afar[3] | 18.98 (4.71) | 10.49 (3.82) | 8.85 (3.84) | 14.25 (4.40) | 52.56 (14.49) |
| No[4] | 18.43 (5.21) | 10.00 (3.23) | 7.95 (2.47) | 13.64 (4.42) | 50.02 (13.52) |
| F | 3.029 | 11.985 | 8.809 | 2.429 | 5.844 |
| p | 0.029* | <0.001** | <0.001** | 0.064 | 0.001** |
| Post-hoc | 1<2 | 3<2 | 3<2 | | 4<2 |

*p<0.05; **p<0.01, Bonferroni test and Dunn-Bonferroni test were used as post-hoc test; SD: Standard deviation; r: Pearson correlation coefficient; t: Independent groups t-test;$\chi^2$ Kruskal-Wallis test; F: One-way variance analysis.

**TABLE 3:** Comparison of the participants' the descriptive characteristics and the Isolation Precautions Compliance Scale scores (n=614).

| | Isolation Precautions Compliance Scale |
|---|---|
| Age (year) | |
| Mean (SD)=28.13 (5.32) | |
| r | 0.130 |
| p | 0.001** |
| Sex | Mean (SD) |
| Female | 75.85 (9.06) |
| Male | 70.06 (9.84) |
| t | 7.005 |
| p | <0.001** |
| Educational status | Med (minimum-maximum) |
| High school[1] | 74 (70-79) |
| Associate degree[2] | 77 (70-82) |
| Bachelor's degree[3] | 76 (70-83) |
| Master's degree[4] | 68 (63-78) |
| PhD degree[5] | 77 (65-84) |
| $\chi^2$ | 35.063 |
| p | <0.001** |
| Post-hoc | 4<2, 4<3 |
| Marital status | Mean (SD) |
| Single | 73.36 (9.18) |
| Married | 75.63 (10.29) |
| t | 2.807 |
| p | 0.005** |
| Professional working years | Mean (SD) |
| <1 year[1] | 72.41 (12.54) |
| 1-5 years[2] | 73.19 (9.42) |
| 6-10 years[3] | 75.88 (8.89) |
| 11-15 years[4] | 76.68 (9.44) |
| >15 years[5] | 78.64 (8.73) |
| F | 4.977 |
| p | 0.001** |
| Post-hoc | 1<5, 2<5 |
| Working unit | Mean (SD) |
| Emergency unit[1] | 73.17 (10.71) |
| Operating theatre unit[2] | 71.22 (9.78) |
| Outpatient unit[3] | 74.14 (9.63) |
| Inpatient unit[4] | 75.25 (9.20) |
| Intensive care unit[5] | 75.11 (9.18) |
| F | 3.154 |
| p | 0.014* |
| Post-hoc | 2<4, 2<5 |
| Close contact with the suspected COVID-19 patient (oral care, aspiration, intubation, etc.) | Mean (SD) |
| Yes | 73.91 (9.44) |
| No | 75.34 (10.45) |
| t | 1.432 |
| p | 0.153 |
| Close contact with the diagnosed COVID-19 patient (oral care, aspiration, intubation, etc.) | Mean (SD) |
| Yes | 73.58 (9.55) |
| No | 76.07 (9.74) |
| t | 2.754 |
| p | 0.006** |
| The presence of individuals around who are COVID-19 positive | Mean (SD) |
| Exists among my family members[1] | 72.52 (9.48) |
| Exists among my colleagues[2] | 73.8 (9.47) |
| Exists among those I know from afar[3] | 76.71 (9.77) |
| No[4] | 75.66 (10.6) |
| F | 3.230 |
| p | 0.022* |
| Post-hoc | 1<3 |

*p<0.05; **p<0.01, Bonferroni test and Dunn-Bonferroni test were used as post hoc tests; SD: Standard deviation; r: Pearson correlation coefficient; t: Independent groups t test; $\chi^2$: Kruskal-Wallis test; F: One-way variance analysis.

research findings supported the presence of coronaphobia in healthcare professionals and more than one third of them got points in the critical range.[26] Another similar study was conducted by Labrague and De Los Santos using the Coronavirus Anxiety Scale, and the prevalence rate of coronaphobia was found to be 54.76% in the study.[27] In the study conducted by Yayla and Eskici İlgin was also found that the nurses' C19P-S mean score was 52.59±19.65 and the nurses' psychological well-being was significantly affected by coronaphobia.[28] In the study of Fronda and Labrague, it was similarly found that more than half of frontline nurses experienced coronaphobia.[29] In the light of these studies that support each other, it is seen that almost half of the nurses developed coronaphobia.

The level of coronaphobia was considerably greater in the psychological sub-scale for women and in both the psychological and social sub-scales for married individuals, pursuant to this study. Studies of Mora-Magaña et al. and Labrague and De Los Santos support our research findings by highlighting that the levels of anxiety, depression and coronaphobia are significantly higher in women than men.[26,27] In addition, Labrague and De Los Santos also reported that the level of coronaphobia is higher in those who are married.[27] This study discovered a substantial positive link between age and coronaphobia level. Labrague and De Los Santos pointed out the level of anxiety and coronaphobia increasing with age, while Mora-Magaña et al. reported that they found the opposite relationship.[26,27] Considering the studies conducted, it is seen that the level of coronaphobia is affected by age, gender, and marital status.

The nurses participating in this study on the Isolation Precautions Compliance Scale was determined as 74.18±9.64. This was calculated as an average score and it was found that the compliance was high. Erden et al. examined the compliance of doctors and nurses with isolation precautions, and it was stated that the nurses got similar scores (77.26±6.5) and their level of compliance was good.[30] Considering the total scores of the nurses' Isolation Precautions Compliance Scale in other studies, the scores were determined as 75.52±11.91 in the study of Güleç Şatır et al., and 76.84±9.16 in the study of Sarıer and Kurşun,

**TABLE 4:** Investigation of the relationship between the participants' the COVID-19 Phobia Scale and the Isolation Precautions Compliance Scale scores (n=614).

| | | Psychological | Psycho-somatic | Economic | Social | Total |
|---|---|---|---|---|---|---|
| Isolation Precautions Compliance Scale | r | 0.208 | -0.289 | -0.235 | 0.019 | -0.070 |
| | p | <0.001** | <0.001** | <0.001** | 0.636 | 0.084 |

**p<0.01; r: Pearson's correlation coefficient.

and 76.55±8.48 in the study of Arli and Bakan, it has been observed that they support our research findings.[31-33] In the study of Suliman et al., it was reported that most of the nurses (90%) had good knowladge of isolation measures, but only 65% of nurses had good compliance with isolation precautions.[34] In line with these results, it is thought that compliance with isolation precautions, which are of great importance in controlling the pandemic, is at a good level in nurses.

In this study, it was found that women's compliance with isolation precautions was found to be significantly higher than men, and there was a significant difference between nurses' average age and professional working time and their level of compliance with isolation precautions. Contrary to this study, Erden et al. and Sarıer and Kurşun reported that there is no significant difference between gender, occupation, isolation education status and the unit worked in, and the total score obtained from the scale in similar studies they conducted.[30,32] Also in the study of Geçit and Özbayır, it was found to be no significant difference between compliance of isolation precautions and age, gender and working year in health care workers.[35] However, Güleç Şatır et al. found higher levels of compliance with isolation precautions in women similar to our study.[31] In this study, the total score of the Isolation Precautions Compliance Scale of the nurses working in the operating theatre unit was significantly lower than the nurses working in inpatient unit and intensive care unit. Arli and Bakan also found that the total score of the Isolation Precautions Compliance of the nurses working in the intensive care unit was higher than the nurses working in the clinic.[33] In the light of the studies carried out, it is seen that in the fight against the pandemic, women are better than men in terms of complying with isolation precautions, and compliance increases as age, professional working year increases and working in a special unit.

It is known that healthcare professionals in high-risk areas are exposed to physical and psychological stress due to prolonged exposure to infected patients, having a high risk of morbidity, having to comply with strict isolation precautions, and lack of personal protective equipment.[6,12,13] The total score of the nurses' Isolation Precautions Compliance Scale and the psychological sub-scale score were shown to have a substantial positive association in this study, while the psycho-somatic and economic sub-scale scores had a significant negative link. However, there was no significant link between the nurses' coronaphobia and their adherence to isolation protocols. Increase in psychological influence in terms of coronaphobia increases compliance with isolation precautions, while it has the opposite effect in psychosomatic and economic dimensions.

### LIMITATIONS

The study included nurses from hospitals linked with the Ministry of Health in İstanbul. As a result, it does not reflect all nurses.

## CONCLUSION

According to the findings of this study, the coronavirus phobia levels of nurses working in pandemic wards were below the usual range, and their compliance with isolation protocols was also high. In addition, coronavirus phobias of nurses were at normal levels in the psychological, social, and economic subscale and above normal in the psycho-somatic subscale. While there was no significant association between nurses' level of coronaphobia and compliance with isolation precautions, there was a significant association between psychological, psycho-somatic, and economic sub-scales. As nurses' psy-

chological phobia related to coronavirus increased, their compliance with isolation measures increased, and as their psychosomatic and economic phobias increased, their compliance with isolation measures decreased. All measures should be taken for the risk of coronavirus phobia in nurses and psychological counseling services should be provided to improve their mental health. Thus, the quality of care can be increased by improving the nurse' mental health and isolation precautions compliance.

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### *Conflict of Interest*

*No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.*

### *Authorship Contributions*

***Idea/Concept:*** *Elif Gezginci, Selma Can, Sonay Göktaş;* ***Design:*** *Elif Gezginci, Selma Can, Sonay Göktaş;* ***Control/Supervision:*** *Elif Gezginci;* ***Data Collection and/or Processing:*** *Selma Can;* ***Analysis and/or Interpretation:*** *Elif Gezginci, Selma Can;* ***Literature Review:*** *Elif Gezginci, Selma Can;* ***Writing the Article:*** *Elif Gezginci, Selma Can;* ***Critical Review:*** *Elif Gezginci, Selma Can.*

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