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RESEARCH ARTICLE

IMPLICATIONS OF NURSES' COVID-19 PHOBIAS ON PATIENT SAFETY CULTURE: A CROSS-SECTIONAL STUDY

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ABSTRACT

BACKGROUND:

COVID-19 phobia in nurses may increase the incidence of negative events that threaten the culture of patient safety. Especially due to the devastating effects of the coronavirus pandemic, there is concern that nurses may engage in practices that may threaten patient safety against a possible pandemic. Therefore, this study aims to examine the relationship and impact of nurses' COVID-19 phobia levels with patient safety culture.

METHODS:

The study was conducted using a descriptive and cross-sectional design. Data was collected from 165 nurses in Turkey using the descriptive characteristics form, COVID-19 phobia (C19P-S) and patient safety culture scale (PSC-S) between August and November 2022 via online responses.

RESULTS:

The mean score of C19P-S of the nurses was 47,85±19,29, and the mean score of PSC-S was determined as 2,75±0,57. There was a significant correlation between psychological and the employee behavior subscales ($r=0,174$; $p<0,05$). The impact value of nurses' COVID-19 phobia on patient safety culture was found to be $\beta=,153$, $p=,050$.

CONCLUSIONS:

Nurses have low COVID-19 phobias and moderate patient safety culture perceptions. A positive and low-level significant relationship was found between psychological and employee behavior subscales. There was no significant impact of nurses' COVID-19 phobias on patient safety culture.

KEYWORDS

COVID-19 phobia, healthcare, nursing, patient safety culture

INTRODUCTION

The global coronavirus pandemic has brought unprecedented challenges to healthcare systems worldwide. The rapid spread and evolving variants of the virus have caused widespread fear and anxiety among the general population [1]. Constant exposure to the coronavirus and its potential threats has given rise to a new phenomenon called "coronaphobia", meaning constant and excessive fear. This phenomenon is particularly prevalent among nurses, who are in direct contact with infected patients and are at higher risk of contracting the virüs [2]. Coronaphobia, or COVID-

19 phobia, can manifest in a variety of ways, including anxiety, sleep disturbances and burnout, and has a negative impact on nurses' mental health and well-being. Nurses experience fear due to close contact with patients, the risk of infecting themselves or their loved ones, and witnessing the severity of the disease [3].

The fact that COVID-19 phobia was found to be above average in nurses in various studies [4, 5] may increase the incidence of adverse events that threaten patient safety [6]. As the level of COVID-19 phobia increases, job satisfaction decreases and healthcare workers, including nurses, are more likely to consider leaving their jobs. This decreased job satisfaction and increased intention to quit can lead to understaffing and inadequate care for patients [7, 8] ultimately jeopardizing patient safety. In addition, nurses with increased COVID-19 phobia may unintentionally focus more on the potential dangers associated with coronavirus and negatively affect patient care plans [5]. Focusing on the threat of a pandemic with increased fear can reduce focus on other important aspects of patient care, leading to inadequate management of non-coronavirus-related health problems, delays in necessary treatments, and increased risk of medical errors [4]. In addition, nurses who experience fear and anxiety may experience burnout and poor job performance, which can jeopardize patient safety [7, 9].

COVID-19 phobia among nursing professionals could have long-term consequences not only on mental health but also on the quality of care delivered to patients [10]. Moreover, the chronic stress and anxiety associated with COVID-19 phobia may lead to absenteeism and high turnover rates, exacerbating the already existing nursing shortage [11]. The impact of COVID-19 phobia on nurses is based on the fact that it can affect the adoption of safe practices in healthcare delivery and in turn reduce patient safety.

The changing processes of healthcare institutions in response to the coronavirus have also caused further fears and concerns [8]. This exacerbated pre-existing patient safety hazards, leading to patient safety hazards that did not exist before the pandemic. It has directly and indirectly created difficulties in the treatment and proper isolation of patients and led to underreporting of patient safety incidents [12]. An inappropriate work environment is a barrier to a positive safety culture and high quality care. This is because when nurses perceive that their work environment is conducive to professional practice, they are more engaged in their work and thus provide safe patient care [6].

All these experiences make the relationship between nurses' COVID-19 phobia and patient safety culture more complex and multifaceted. As COVID-19 phobia in nurses may hinder their ability to comply with patient safety protocols and best practices, it may negatively affect the development of a patient safety culture in healthcare settings [10]. This failure to promote a patient safety-centered culture can ultimately lead to decreased patient safety, as nurses may struggle to provide the high-quality care needed to protect patients from potential harm. The coronavirus or any other pandemic that may emerge may affect nursing practice. Examining the consequences of nurses' COVID-19 phobias on patient safety culture, which is limited in the literature, may provide preliminary preparation for nurse managers to carry out possible regulatory remedial activities. Therefore, in this study, nurses' perceptions of COVID-19 phobia and patient safety culture were investigated. In addition, the effect of nurses' COVID-19 phobia on patient safety culture was examined.

METHODS

DESIGN

Descriptive and cross-sectional design

SETTINGS AND PARTICIPANTS

The population of the study consisted of nurses in Turkey (N: 232,442) [13]. The sample was determined by a snowball sampling method, one of the non-random sampling methods. Nurses who had been working for at least 6 months were included in the study. Since there is no sample study using the scales included in the study, the minimum number of people was determined as 90 people to reach 80% power with an effect size of 0.30 (medium), 95% confidence interval and 5% margin of error in GPower. A total of 172 registered nurses were reached to participate. After excluding those who did not meet the inclusion criteria, data from n=165 nurses were included in the analysis.

MEASUREMENT

The data of the study were collected using the descriptive characteristics form, COVID-19 Phobia Scale and Patient Safety Culture Scale.

Descriptive characteristics form: A total of 16 questions were created by researchers through the literature [5, 14] on the descriptive characteristics of nurses. These include questions such as age, gender, education status, working status in COVID-19 units, etc.

COVID-19 Phobia Scale (C19P-S): It was a 20-item scale developed to measure the phobia levels of people against coronavirus. It consisted of four sub-scales: psychological, psychosomatic, economic and social. Items in the 5-point Likert-type scale were evaluated between "strongly disagree (1)" and "strongly agree (5)". The total scale score ranged between 20 and 100 points, and the higher the score, the higher the phobia in the relevant sub-scales and the general scale. The Cronbach's alpha internal consistency coefficient of the entire scale was .93; for the psychological sub-scale, it was .87; for the psychosomatic sub-scale, .89; for the social sub-scale, .85; and for the economic sub-scale, .88 [15].

Patient Safety Culture Scale (PSC-S): Consisting of 51 items in total, the scale was designed in 5 sub-scales: "management and leadership", "employee behavior", "unexpected event and error reporting", "employee training" and "care environment". The total Cronbach's alpha coefficient of the scale was .97; for the sub-scales, 'management and leadership' was .92 (highest), and 'unexpected event and error reporting' was .83 (lowest). The scale was a four-point Likert scale; it was scored between (1) completely disagree and (4) completely agree. When calculating the scale score, the item scores in the sub-scales were summed, and the total number obtained was divided by the number of items to obtain the average score of each sub-scale between one and four. In the interpretation of the scale score, an increase in the average score towards four indicated the presence of a positive patient safety culture, while a decrease towards one indicated the presence of a negative patient safety culture [16].

DATA COLLECTION

Data were collected through Google Forms with the online survey method between August and November 2022. The link to the data collection tools created through Google Forms was shared with nurses who could be reached via social media (Instagram, Facebook, Twitter, Telegram, Whatsapp). Accordingly, nurses were invited to participate in the study. Logging in from the settings section of the form was mandatory and limited to a single response to prevent repeated entries.

DATA ANALYSIS

The data were analyzed using the SPSS-22 statistical package program. The descriptive characteristics of the nurses were evaluated by descriptive statistical methods (percentage, mean, standard deviation etc.). The normality of the data was assessed based on skewness and kurtosis values. Parametric and nonparametric tests were used (Student t Test, Mann Whitney U, Kruskal Wallis). Post hoc tests were used to determine the difference between groups (Dunnett's T3). The relationship between the scales was evaluated by Pearson correlation test. Simple linear regression analysis was used to evaluate the relationships between variables.

ETHICAL CONSIDERATIONS

In order to conduct the study, permission was obtained from the Health Sciences Non-Interventional Research Ethics Committee of a state university (28.04.2022/2022-64) and from the responsible authors via e-mail for the use of the scales. Voluntary informed consent form was obtained from the participants for data collection.

RESULTS

The mean age of the nurses participating in the study was 30.3±7.08 years, 87.3% were female and 66.7% had bachelor's degree. The mean professional experience of the nurses was 7.84±7.41 and 75.8% of them chose the profession willingly. The nurses participating in the study, 81.8% were staff nurses and 75.2% had been working in this position for 5 years or less. It was determined that 71.5% of the nurses worked in COVID-19 units and 53.9% worked in these units for 1 year or less. While 83.6% did not have a chronic disease, 74.5% had a chronic disease in their family. It was determined that 68.5% of

the nurses participating in the study were infected with COVID-19, 80% of their relatives were infected and 38.5% of their relatives died from COVID-19. In addition, it was determined that 92.1% did not have psychiatric problems and 4.8% received psychiatric treatment due to COVID-19 **(Table 1).**

TABLE 1. NURSES' DESCRİPTİVE CHARACTERİSTİCS AND C19P-S AND PSC-S MEAN SCORES (N=165)

Variables	C19P-S Mean±SD	PSC-S Mean±SD
Age Mean±SD=30.3±7.08		
Gender		
Female (n=144, %87.3)	46.77±18.13	2.72±0.56
Male (n=21, %12.7)	55.28±25.21	2.93±0.63
Test value	Z=-1.52	Z=-1.77
p value	p=0.128	p=0.077
Educational status		
High school degree (n=19, %10.9)[a]	59.31±18.37	2.94±0.50
Bachelor's degree (n=110, %66.7)[b]	48.13±19.93	2.75±0.52
Graduate degree (n=36, %22.4)[c]	40.94±14.55	2.64±0.73
Test value	X^2=10.68	X^2=1.72
p value	**p=0.000***	p=0.421
	a, b > c**	
Choose the profession willingly		
Willingly (n=125, %75.8)	47.63±19.33	2.81±0.58
Unwillingly (n=40, %24.2)	48.55±19.40	2.56±0.51
Test value	t=-0.26	t=2.46
p value	p=0.796	**p=0.010***
Position		
Staff nurse (n=135, %81.8)	49.17±19.15	2.77±0.57
Nurse manager (n=30, %18.2)	41.90±19.09	2.66±0.59
Test value	t=1.88	t=0.97
p value	p=0.064	p=0.332
Working year in this position		
5 years and ↓ (n=124, %75.2)	46.56±20.03	2.73±0.61
5 years ↑ (n=41, %24.8)	51.75±16.47	2.80±0.45
Test value	t=-1.49	t=-0.60
p value	p=0.130	p=0.540
Work in COVID-19 units		
Worked (n=118, %71.5)	48.10±20.07	2.73±0.61
Did not work (n=47, %28.5)	47.23±17.37	2.81±0.44
Test value	t=-0.26	t=0.95
p value	p=0.794	p=0.341
Working year in COVID-19 units		
1 years and ↓ (n=89, %53.9)	46.16±17.6	2.75±0.52
1 years ↑ (n=76, %46.1)	49.82±21.04	2.75±0.63
Test value	t=-1.20	t=0.05
p value	p=0.232	p=0.955
Having chronic disease		
Yes (n=27, %16.4)	52.77±21.92	2.74±0.42
No (n=138, %83.6)	46.89±18.67	2.75±0.60
Test value	Z=-1.24	Z=-0.73

p value	p=0.218	p=0.461
Having chronic disease in family		
Yes (n=123, %74.5)	48.21±18.82	2.72±0.58
No (n=42, %25.5)	46.80±20.82	2.84±0.55
Test value	t=0.40	t=-1.13
p value	p=0.688	p=0.265
Infected with COVID-19		
Yes (n=113, %68.5)	45.78±19.22	2.78±0.58
No (n=52, %31.5)	52.34±18.85	2.69±0.56
Test value	t=-2.04	t=0.89
p value	**p=0.044***	p=0.376
Relatives being infected with COVID-19		
Yes (n=132, %80)	46.39±18.99	2.75±0.58
No (n=33, %20)	53.69±19.67	2.73±0.54
Test value	t=-1.96	t=0.16
p value	p=0.057	p=0.862
Relatives died due to COVID-19		
Yes (n=47, %38.5)	52.65±19.00	2.73±0.60
No (n=118, %71.5)	45.94±19.15	2.76±0.56
Test value	t=2.03	t=-0.20
p value	**p=0.043***	p=0.833
Having a psychiatric problem		
Yes (n=13, %7.9)	35.53±12.96	2.64±0.46
No (n=152, %92.1)	48.90±19.41	2.76±0.58
Test value	Z=-2.26	Z=-0.50
p value	**p=0.021***	p=0.619
Willing to get psychiatric treatment due to COVID-19		
Yes (n=8, %4.8)	49.25±13.85	2.70±0.34
No (n=157, %95.2)	47.78±19.56	2.75±0.58
Test value	Z=-0.32	Z=-0.63
p value	p=0.742	p=0.521

*: p<0.05, Z= Mann Whitney U, t= Student t Testi, X^2= Kruskal Wallis, **Dunnett's T3, C19P-S: COVID-19 phobia scale, PSC-S: patient safety culture scale

When the mean scores of the COVID-19 Phobia Scale were compared based on the nurses' educational status, it was found that the scores of nurses with a high school or bachelor's degree were statistically significantly higher than those of nurses with a graduate degree (p<0.05). There was no statistically significant difference between high school and bachelor's degree groups (Table 1).

TABLE 2. MEAN SCORES OF NURSES İN C19P-S AND PSC-S (N=165)

Variables	Min-max points of the original scale	Mean±SD (Min-Max)
C19P-S	20-100	47.854±19.29 (20-96)
Psychological*	6-30	15.775±6.17 (6-30)
Psychosomatic*	5-25	10.945±5.09 (5-25)
Economic*	4-20	9.030±4.06 (4-20)
Social*	5-25	12.103±5.01 (5-25)
PSC-S	1-4	2.754±0.57 (1-4)
Management and Leadership**	1-4	2.749±0.60 (1-4)

Employee Training**	1-4	2.742±0.69 (1-4)
Unexpected Event and Error Reporting**	1-4	2.758±0.72 (1-4)
Care Environment**	1-4	2.777±0.68 (1-4)
Employee Behavior**	1-4	2.754±0.62 (1-4)

*: C19P-S's sub-scales, **PSC-S's sub-scales, C19P-S: COVID-19 phobia scale, PSC-S: patient safety culture scale

While the mean score of nurses' COVID-19 phobia was 47.85±19.29, the highest mean score in the sub-scales belonged to the psychological sub-scale with 15.77±6.17. This was followed by mean scores of 12.10±5.01, 10.94±5.09 and 9.03±4.06 in the social, psychosomatic and economic sub-scales, respectively. While the mean score of the nurses on the patient safety culture scale was determined as 2.75±0.57, the highest mean score in the sub-scales belonged to the care environment sub-scale with 2.77±0.68. This was followed by mean scores of 2.758±0.72, 2.754±0.62, 2.749±0.60 and 2.742±0.69 in the unexpected event and error reporting, employee behavior, management and leadership and employee training sub-scales, respectively (Table 2).

TABLE 3. CORRELATİON VALUES OF C19P-S, PSC-S AND SUB-SCALES' (N=165)

Scales and Sub-scales		Management and Leadership	Employee Training	Unexpected Event and Error Reporting	Care Environment	Employee Behavior	PSC-S
Psychological	r	0.116	0.138	0.125	0.087	0.174	0.149
	p	0.131	0.072	0.100	0.266	**0.020***	0.052
Psychosomatic	r	0.114	0.077	0.072	0.020	0.135	0.110
	p	0.141	0.324	0.368	0.799	0.087	0.165
Economic	r	0.092	0.072	0.062	0.047	0.109	0.095
	p	0.243	0.355	0.421	0.548	0.163	0.223
Social	r	0.124	0.119	0.114	0.064	0.148	0.136
	p	0.117	0.128	0.148	0.416	0.057	0.088
C19P-S	r	0.119	0.111	0.102	0.060	0.153	0.132
	p	0.122	0.155	0.193	0.441	0.053	0.092

*: p<0.05, r: pearson correlation coefficent, C19P-S: COVID-19 phobia scale, PSC-S: patient safety culture scale

In the study, a positive, low-level significant relationship was found between the psychological sub-scale of the COVID-19 phobia scale and the employee behavior sub-scale of the patient safety culture scale (p<0.05) (Table 3).

TABLE 4. SİMPLE LİNEAR REGRESSİON ANALYSİS OF C19P-S AND PSC-S (N=165)

Dependent variable	Independent variable	β	t	p	F	Model (p)	R^2	Durbin-Watson
Patient safety culture scale	COVID-19 phobia scale	0.153	1.927	0.050	3.907	0.050	0.022	1.824

p<0.05, ß: Standardized regression coefficient; t: significance of regression coefficients, F: Regression ANOVA test statistic, R^2: coefficient of determination; p: p probability of significance of regression coefficients

The effect of nurses' COVID-19 phobias on patient safety culture is shown in Table 4. According to the results of the regression model, it was determined that COVID-19 phobia did not have a significant effect on patient safety culture (Table 4).

DİSCUSSİON

As frontline workers, nurses have faced numerous stressors throughout the pandemic, including increased workloads [3], risk of infection [8] and the emotional cost of caring for critically ill patients [1]. In addition, it has been shown in the literature that factors such as the lack of a definitive treatment, insufficient protective equipment, feelings of insecurity, loneliness due to isolation, and anxiety about the future contribute to COVID-19 phobia during this period [17]. In most of the studies in the literature, it is seen that the COVID-19 phobia of nurses is between medium and high [5, 14, 18]. However, in our study, it was determined that nurses had a low level of COVID-19 phobia. This discrepancy may be attributed to factors such as the production of the coronavirus vaccine, the identification of risk factors and transmission routes of the disease, and the decrease in cases compared to the early periods of the pandemic [19]. In addition, national policies implemented by the Ministry of Health in Turkey to protect healthcare workers such as prioritizing nurses and other frontline staff for early vaccination and providing separate accommodation facilities to reduce transmission risk [20] may also have contributed to the reduction in COVID-19 phobia among nurses.

In line with the literature [5, 21] the highest mean score was found in the psychological sub-scale and the lowest mean score was found in the economic sub-scale in our study. This finding emphasizes the importance of psychological factors in the experience of COVID-19 phobia among nurses, even if the general phobia level in our study was low. As mentioned earlier, it can be associated with various stressors and challenges faced by nurses during the pandemic. Specifically, the necessity of isolation practices, uncertainty about the course of the pandemic, and anxiety about caring for infected patients [19], may have contributed to the increased psychological impact on nurses. On the other hand, the low scores observed in the economic sub-dimension may be explained by the fact that nurses maintained employment security and continued to receive regular income during the pandemic. Both globally and nationally, many governments implemented financial support policies to mitigate the economic impact of the pandemic. These included incentive payments, job security measures, and flexible working arrangements [22, 23] Such supports may have contributed to the lower level of economic phobia observed among nurses in this study. Our findings highlight the importance of supporting nurses' psychological well-being during and beyond the coronavirus pandemic. Healthcare organizations and policymakers should consider implementing evidence-based interventions aimed at alleviating the psychological stressors experienced by nurses. Previous studies recommend a range of supportive strategies including access to mental health services, structured peer support programs, and leadership approaches that foster psychological safety and well-being [24, 25]. Additional measures may include regular debriefings, resilience training, flexible scheduling, and transparent communication about evolving situations. Integrating such strategies into future preparedness plans can help safeguard the mental health of nurses and enhance the sustainability of the healthcare workforce.

A relationship was found between educational level and COVID-19 phobia scale scores. This finding could potentially be associated with lower COVID-19 phobia scores due to increased professional self-confidence and professionalism as the level of education increases [26]. However, this result may also be influenced by age-related factors. Since COVID-19 is known to have a more severe impact on older populations [27], the higher phobia scores observed in nurses with lower education levels particularly high school graduates might also be partially explained by their older age. In Türkiye, many nurses with only a high school education tend to be older, which may contribute to a heightened perception of personal risk and thus increased COVID-19 phobia.

Interestingly, unlike the literature [28], we found that nurses not infected with coronavirus had higher phobia scores. According to global meta-analyses, the infection rate among healthcare workers ranged from approximately 10% to 20% during the peak periods of the pandemic, depending on country and region [29]. In Turkey, the Ministry of Health reported a relatively high infection rate among healthcare workers in the early stages of the pandemic [30], although specific nationwide statistics for nurses are limited. This contrast in infection status may reflect differing levels of risk perception. Nurses who had not yet been infected may have had heightened fear due to uncertainty and anticipation of infection, whereas those who had recovered may have experienced reduced anxiety. These findings highlight the importance of considering nurses' differing pandemic experiences when designing psychological support interventions. Tailored

approaches based on individual exposure history and perceived risk may be more effective in promoting psychological well-being.

Another result obtained in the study was the level of patient safety culture of nurses. In the study, it was determined that the level of patient safety culture of nurses was at a moderate level and the highest average was in the care environment sub-scale. This finding is different from the study that found that employee behavior and education were the sub-scales with the highest mean scores [31]. A possible explanation for this difference is that healthcare organizations are increasingly focusing on improving the care environment, including physical structure, equipment and technology such as electronic medical records and barcoding systems for supplies and medications [32]. Furthermore, this study revealed that the unexpected event and error reporting sub-scale ranked second, followed by employee behavior, management and leadership, and employee training. This distribution suggests that healthcare organizations have made progress in improving the environment of care, but improvements are needed in other aspects of patient safety culture, especially in employee training. In order to achieve a comprehensive patient safety culture, it is crucial that improvements are balanced across all sub-scales. By emphasizing regular training, effective communication and error incident reporting, healthcare organizations can further strengthen patient safety culture and ensure both safe and quality care for patients and employee safety [33]. Patient safety practices in Türkiye are standardized within the framework of the Health Quality Standards and relevant regulations. In this context, the quality criteria set by Türkiye Health Care Quality and Accreditation Institute and the scientific guidance provided by Health Institutes of Türkiye ensure that patient safety culture is approached based on similar principles across all healthcare institutions [34]. Although not specifying the names of the hospitals in this study constitutes a limitation, the fact that all healthcare institutions in Türkiye operate under common legal, structural, and quality-based standards allows the findings to be interpreted meaningfully at the national level.

In line with the previous literature, this study shows that nurses who willingly practice their profession have higher patient safety culture scores [35]. While voluntary commitment may contribute to professional satisfaction and retention [36], it is important to note that adherence to patient safety protocols and professional accountability are far more critical factors in shaping patient safety culture [37]. In this context, nurse managers play a vital role in establishing and sustaining a strong patient safety culture, especially during crisis periods like the COVID-19 pandemic. Their responsibilities include not only ensuring compliance with safety protocols but also supporting staff well-being and fostering a safety-oriented work environment [38]. Therefore, rather than focusing solely on personal willingness, structured leadership, organizational control, and systematic oversight may be emphasized as the main drivers of patient safety culture.

In the study, a positive, low-level significant relationship was found between the psychological sub-scale of the COVID-19 phobia scale and the employee behavior sub-scale of the patient safety culture scale. Although there are no studies in the literature directly investigating the relationship between coronavirus-19 phobia and patient safety culture, it is important to consider that higher than normal risks that threaten patient safety in pandemics lead to an increase in medical errors [39]. Increased fear and anxiety related to COVID-19 phobia may influence nurses' perceptions of patient safety culture, especially in the context of employee behavior. A study by Labrague and Santos (2020) highlights the potential impact of the coronavirus pandemic on nurses' psychological well-being, which may indirectly affect their perceptions of patient safety culture [8]. Similarly, Al Maqbali et al. (2021) emphasize the importance of addressing mental health concerns among healthcare workers to maintain a positive patient safety culture during challenging times such as pandemics [40]. As a result, in this study, no direct relationship was found between COVID-19 phobia and patient safety culture; however, it was found that there was a positive relationship with the sub-scales of the scales, albeit at a low level. This finding suggests that nurses' concerns and fears during the pandemic may have affected certain aspects of their perceptions of patient safety culture. It also suggests that with increased risks and medical errors for patients during pandemics, the need to address and support nurses' mental health is important to ensure a strong patient safety culture. In the study, no significant result was found when the effect of COVID-19 phobia on patient safety culture was examined. This suggests that even if nurses have phobias/fears of COVID-19 or any epidemic disease, it will not affect their perception of patient safety culture due to their professionalism and professional ethical values [41]. In the literature, although nurses were psychologically affected by COVID-19, their caregiver roles were not affected [42] which supports the findings of our study. In addition, it is a pleasing result that the findings of our study do not support this, although it is thought that

epidemics such as COVID-19 may cause complex health care delivery in working environments, thus jeopardizing patient safety [43].

LIMITATIONS OF THE STUDY

The results of this study are limited to the responses of the nurses who participated in the study. Due to the cross-sectional design of the study, the findings obtained reveal the situation in a certain period. The fact that this research was conducted during the period when the pandemic started to lose its importance may have had an impact on the results. Therefore, it would be useful to test this research with a longitudinal design for a possible future pandemic in order to support the research findings.

CONCLUSİONS

This study emphasized the relationship between nurses' COVID-19 phobia and patient safety culture and concluded that as the impact of the pandemic decreased, COVID-19 phobia decreased in nurses, but its psychological dimension continued. The study also reveals that nurses' individual and professional characteristics as well as their experiences of being infected with the disease affect COVID-19 phobia. A low level significant positive correlation was found between the sub-scales of COVID-19 phobia and patient safety culture sub-scales. In addition, it was determined that COVID-19 phobia and patient safety culture were not predictors. Future research should focus on longitudinal studies to monitor how pandemic-related fears and perceptions of patient safety culture evolve over time. Rather than assuming pandemics are inevitable, they should be treated as high-impact risks that require proactive strategies. In this regard, nurse managers and policy makers must take preventive and supportive actions to maintain a resilient safety culture during future crises. Nurse managers, in particular, should be aware of the psychological impact of such crises on nurses and actively support them by fostering collaboration, psychological empowerment, and professional resilience.

FUTURE CLİNİCAL EVİDENCE

This study suggests that supporting nurses with psychological training and interventions during extraordinary periods such as pandemics will contribute to improving the negative consequences of COVID-19 phobias on patient safety culture.

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