Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Research

The Fear of Surgery and Coronavirus in Patients Who Will Undergo a Surgical Intervention

Ayşe Gökçe Işıklı, PhD, RN[a,*], Zeynep Kızılcık Özkan, PhD, RN[b], Zuhal Buberka, BSN, RN[c]

[a] Thoracic Surgery, Health Research and Application Center, Trakya University, Edirne, Turkey
[b] Department of Surgical Nursing, Faculty of Health Sciences, Trakya University, Edirne, Turkey
[c] Cardiovascular Surgery, Health Research and Application Center, Trakya University, Edirne, Turkey

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A B S T R A C T

Purpose: The aim of this study was to determine the fear of surgery and Coronavirus in patients who will undergo a surgical intervention.
Design: A descriptive cross-sectional study.
Methods: This study was carried out with 103 patients who were hospitalized in the thoracic and cardiovascular surgery departments of a university hospital between July and December 2021 and underwent elective cardiac/thoracic surgery for various indications. The Patient Information Form, Surgical Fear Questionnaire, and Coronavirus (COVID-19) Fear Scale were used to collect data. One hundred three patients were reached within the scope of the study. Data were analyzed with the Mann Whitney U and Kruskal Wallis tests and Spearman's correlation analysis in IBM SPSS (V.22.0) program.
Findings: The mean age of the participants was 57.8 ± 14.0 years (19-82), 68.0% (n = 70) were male, and 78.7% (n = 81) underwent thoracic surgery. The total mean score of the patients on the Surgical Fear Scale was 26.9 ± 20.5 while the total mean score on the Coronavirus Fear Scale was 18.2 ± 7.5. A weak positive correlation was identified between the patients' total score averages on the Surgical Fear Scale and the Coronavirus Fear Scale (COVID-19) ($P < .001$).
Conclusions: Patients undergoing cardiothoracic surgery had a low fear of surgery and a close to moderate fear of Coronavirus. Patients' fears of surgery and Coronavirus should be determined before surgery, and psychological support should be provided to patients with high levels of fear.

The World Health Organization (WHO) proclaimed the new Coronavirus disease (COVID-19) a pandemic on March 11, 2020, after its emergence in China at the end of 2019. Many countries, including Turkey, have been impacted by the pandemic. Turkey reported 12,237,610 confirmed cases and 88,734 deaths as of February 7, 2022.[1]

The pandemic measures applied to reduce the spread rate and manage the process during the COVID-19 pandemic have greatly affected individuals socially, economically, and psychologically.[2] Health care services have also been affected by the pandemic. The COVID-19 pandemic has had a significant impact on patient safety, particularly in health care-associated illnesses, that is, nosocomial infections.[3] COVID-19-related anxiety could influence patients' treatment decisions.[4] Surgical interventions other than emergency surgeries have been postponed.[5] The surgery and the pandemic process have become a source of uncertainty and anxiety for patients, their relatives, and health care professionals.[5,6] During the COVID-19 pandemic, 30.3% of neurosurgery patients undergoing non-urgent surgery felt state anxiety.[7] During the COVID-19 pandemic, the number of surgical patients decreased significantly due to patients' aversion to going to the hospital for fear of infection.[8]

Patients have experienced anxiety and fear secondary to surgery and the pandemic due to long waiting times, fear of infection, and surgical procedure. This study aimed to determine the fear of surgery and Coronavirus in patients who underwent a surgical intervention.

Materials and Methods

Study Design and Sample

This descriptive and cross-sectional study was carried out with 103 patients who were hospitalized in the thoracic and cardiovascular surgery departments of a university hospital between July and

Conflict of interest: None to report.

* Address correspondence to Ayşe Gökce Işıklı, Thoracic Surgery, Health Research and Application Center, Trakya University, Edirne, Turkey.
E-mail address: ayysegokce@hotmail.com (A.G. Işıklı).

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December 2021 and underwent elective cardiac/thoracic surgery for various indications. A convenience sampling method was employed in data collection, which was performed on a voluntary basis. Using the G*Power 3.1.9.4 software, the minimum number of people to be sampled was found to be 89, predicting effect size = 0.353 at a 95% confidence level and a 95% power ratio.[9] One hundred three patients were reached within the scope of the study.

The study population consisted of patients who were to undergo cardiac/thoracic surgery for various indications in thoracic surgery and cardiovascular surgery departments. Adult patients who were to undergo cardiac/thoracic surgery in thoracic surgery or cardiovascular surgery departments, had no neuropsychiatric diagnosis, were at least primary school graduates, had a negative preoperative COVID-19 test, and volunteered to participate in the study were enrolled in the study.

Data Collection Tools

The Patient Information Form, the Surgical Fear Questionnaire, and the Fear of Coronavirus (COVID-19) Scale were used to collect data.

Patient Information Form

The form included 10 questions prepared by the researchers in line with the literature on the subject.[10,11] The questions were aimed at identifying the patients' sociodemographic characteristics (age, sex, education level, smoking status, comorbidity), their experience with surgery (surgery to be performed, pain), their experience with COVID-19 (sources of information about COVID-19, COVID-19 infection status, and COVID-19 vaccination status).

Surgical Fear Questionnaire

The scale, which evaluates the fear levels of patients who will undergo a surgical intervention, was developed by Theunissen and others[11] in 2014, and Bağdigen and Özlü[10] conducted its validity and reliability study for the Turkish population in 2018. The scale consists of eight items with a numerical scale of zero to 10. Items one to four on this scale, which consists of two subscales, measure the fear of the short-term consequences of surgery, while items five to eight measure the fear of the long-term consequences of surgery. These questions address fears of surgery, anesthesia, pain, side effects, worsening of health due to surgical intervention, unsuccessful surgical intervention, incomplete recovery after surgical intervention, and prolonged recovery. The lowest score that can be obtained from the scale is 0, and the highest score is 80. High scores on the Surgical Fear Questionnaire indicate high levels of fear. Cronbach's alpha coefficient of the scale was determined as 0.76 to 0.92 for the original scale and 0.93 in the study by Bağdigen and Özlü.[10] In this study, Cronbach's α value was calculated as 0.90.

Fear of Coronavirus (COVID-19) Scale

The scale consists of one dimension and seven items. It is a 5-point Likert-type scale, including (1) Strongly disagree, (2): Disagree, (3): Undecided, (4): Agree, and (5): Strongly agree. There is no reverse item on the scale. The total score obtained from all scale items reflects an individual's level of fear of Coronavirus (COVID-19). The scores that can be obtained from the scale vary between seven and 35. A high score on the scale means a high level of fear of Coronavirus.

The scale was developed by Ahorsu et al[12] in 2020, and Bakioğlu et al[13] performed the validity and reliability study of the Turkish version in 2020. Cronbach's α value of the scale was found to be 0.88. In this study, Cronbach's α value was determined as 0.87.

Data Collection

The Patient Information Form, Surgical Fear Questionnaire, and Fear of Coronavirus (COVID-19) Scale were used to collect data. The researcher informed the patients who met the inclusion criteria in the surgical units about the study's objective. Data collection forms were given to the patients who volunteered to participate in the study, and they were asked to answer all the questions in the data collection forms. After the data collection process, which took about 15 minutes, the forms were received by the researcher. During the data collection process, mask, distance, and hygiene rules were followed.

Ethical Considerations

Ethics committee approval and institutional permission required for the study were obtained with the decision dated June 14, 2021, protocol no. TUMF-SREC 2021/290 (decision no. 13/28). The patients participating in the study were informed about the study, and their written consent for participation was obtained. It was explained to the patients that their answers would be kept confidential and the information provided would only be used within the scope of the study. They were told that participation in the study was voluntary and they could leave the study whenever they wanted. Throughout the process, the ethical principles of protecting patient rights, patient confidentiality, privacy, and informed consent were respected.

Data Analysis

Data were analyzed using the IBM SPSS Statistics version 22.0 (IBM, Armonk, NY, USA) packaged software. The descriptive data of the study were evaluated by number, percentage, mean and standard deviation calculations. The Kolmogorov-Smirnov test was used to investigate the compatibility of the data with the normal distribution, and the Mann-Whitney U and Kruskal-Wallis tests were used to evaluate the data that did not show normal distribution. Spearman's correlation test examined the relationship between the total scale score and age. A statistical significance value was accepted as $P < .05$.

Findings

The participants' mean age was 57.8 ± 14.0 years (19-82), 68.0% (n = 70) were male, 70.9% (n = 73) were primary school graduates, 50.5% (n = 52) did not have a chronic disease, and 78.7% (n = 81) underwent thoracic surgery. It was revealed that 7.8% (n = 8) of the patients had had COVID-19 infection and 89.3% (n = 92) had been vaccinated against COVID-19 (Table 1).

The total mean score of the patients on the Surgical Fear Questionnaire was 26.9 ± 20.5, and the mean score on the Fear of Coronavirus (COVID-19) Scale was 18.2 ± 7.5. The total mean score of the Surgical Fear Questionnaire varied according to the presence of chronic disease ($P = .043$), while the total mean score of the Fear of Coronavirus (COVID-19) Scale varied according to educational status ($P = .021$) (Table 1).

A weak positive correlation was identified between the total mean scores of the patients on the Surgical Fear Questionnaire and the Fear of Coronavirus (COVID-19) Scale ($P < .001$) (Table 2).

Discussion

Overall, patients had a low level of surgical fear. Lai et al[14] reported that patients who underwent urogynecological surgery during the pandemic period had a low level of surgical fear, and Çolak and Vural[15] reported that patients who underwent outpatient surgery had a low level of surgical fear. The study conducted by

Table 1
Comparison of the Mean Scores of the Surgical Fear Questionnaire and the Coronavirus Fear (COVID-19) Scale According to the Individual Variables of the Patients (N = 103)

Variables	n (%)	Surgical Fear Questionnaire (Mean ± SD)	Statistical Value	Fear of Coronavirus (COVID-19) Scale (Mean ± SD)	Statistical Value
		26.9 ± 20.5		18.2 ± 7.5	
Sex					
Female	33 (32.0)	29.8 ± 19.8	*P* = .314	19.6 ± 7.5	*P* = .189
Male	70 (68.0)	25.6 ± 20.8	U = 980.500	17.6 ± 7.5	U = 969.500
Education level					
Primary school	73 (70.9)	26.5 ± 21.0	*P* = .774	19.3 ± 7.7	*P* = .048
High school	16 (15.5)	27.8 ± 20.1	KW = 0.083	14.6 ± 6.0	KW=6.090
University	14 (13.6)	28.1 ± 19.4		16.5 ± 7.0	P^{1-2} = .021
Comorbidity					
Yes	51 (49.5)	30.8 ± 20.6	*P* = .043	19.4 ± 7.3	*P* = .097
No	52 (50.5)	23.2 ± 19.8	U = 998.000	17.0 ± 7.6	U = 1075.000
Smoking status					
Yes	18 (17.5)	34.7 ± 23.3	*P* = .106	18.5±8.9	*P* = .865
No	85 (82.5)	25.2 ± 19.6	U = 572.000	18.1 ± 7.3	U = 745.500
Surgery to be performed					
Thoracic	81 (78.7)	27.0 ± 20.5	*P* = .980	17.9 ± 7.5	*P* = .451
Cardiovascular	22 (21.3)	26.6 ± 20.8	U = 877.000	19.3 ± 7.7	U = 797.500
Pain					
Yes	63 (61.2)	19.6 ± 7.5	*P* = .852	19.6 ± 7.5	*P* = .691
No	40 (38.8)	17.6 ± 7.5	U = 1201.500	17.6 ± 7.5	U = 1201.500
Sources of information about COVID-19					
Mass media	86 (83.5)	29.6 ± 20.2	*P* = .523	19.1 ± 7.6	*P* = .775
Others	17 (16.5)	27.5 ± 22.1	U = 293.500	18.5 ± 7.6	U = 323.000
COVID-19 infection status					
Yes	8 (7.8)	20.6 ± 13.1	*P* = .485	21.0 ± 8.0	*P* = .246
No	95 (92.2)	27.5 ± 20.9	U = 320.000	18.0 ± 7.5	U = 286.000
COVID-19 Vaccination status					
Yes	92 (89.3)	27.3 ± 20.6	*P* = .571	18.4 ± 7.7	*P* = .401
No	11 (10.7)	23.9 ± 20.0	U = 448.000	16.4 ± 5.2	U = 427.500
Age (in years)	57.8 ± 14.0 (19-82)	*P* = .778 r^s = -0.028		*P* = .796 r^s=0.026	

U, Mann Whitney U test; KW, Kruskal Wallis H test; r^s, Spearman correlation analysis

Table 2
Relationship Between Surgical Fear Questionnaire and Fear of Coronavirus (COVID-19) Scale (N = 103)

Scale	Fear of Coronavirus (COVID-19) Scale
Surgical Fear Questionnaire	*P* = .000 r^s = 0.102

r^s, Spearman correlation analysis

Theunissen et al[16] with patients undergoing cataract surgery reported low surgical fear levels. Victoria et al[17] revealed that patients who would undergo mastectomy surgery had a low level of surgical fear. Taylan and Çelik[18] determined that patients who would undergo cataract surgery had a low level of surgery fear. Another study by Çetin and Yılmaz[19] reported that fear of surgery in surgical patients was at a low level. Mete and Işık[20] determined that patients who underwent total knee prosthesis surgery experienced moderate surgical fear. Patients who have undergone cardiac or thoracic surgery can be mobilized earlier and more frequently and become independent in activities of daily living more quickly.[21] Additionally, the different characteristics of patients forming the sample of studies (eg, perceived social support, motivation, surgical experience) may also cause different results.

The patients' fear of Coronavirus was close to moderate. Likewise, Keskin et al[22] reported that neurosurgery patients experienced moderate fear of COVID-19. Another study by Kurtgöz and Avcı[23] reported that fear of COVID-19 in patients admitted to the emergency department was at a moderate level. Montalto et al[24] revealed that 55% of patients who underwent elective surgery during the pandemic were afraid of being infected with SARS-CoV-2. Doğan et al[25] found that liver transplant patients had a high level of fear of Coronavirus. Another study revealed that fear of infection with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) affected 65% of solid organ transplant recipients.[26] In their study conducted in the first 6 months of the pandemic, Güven et al[27] found that 90% of oncology patients experienced moderate or severe fear of being infected with COVID-19 and the disruption of their treatment due to the COVID-19 pandemic. The study by Raslan et al,[28] which examined the fear of surgery in elective surgery patients, found that patients had a high level of fear during the pandemic. Sisto et al[29] determined that 59% of patients awaiting bariatric surgery or undergoing bariatric surgery experienced anxiety about the pandemic. The study results revealed that patients experienced different levels of fear of Coronavirus, especially in the early days of the pandemic. It is known that patients are afraid of going to pandemic hospitals.[30] However, the fact that the university hospital where the data were collected was not a pandemic hospital, that suspected and confirmed COVID-19 cases were treated in another public hospital in the same city, and the high vaccination rates of patients (89.3%) may explain the low level of fear of Coronavirus among the patients.

Patients with a chronic disease experienced more surgical fear than patients without it. Furthermore, the perceived stress levels of oncology patients who underwent elective surgery during the pandemic were higher than those without an oncologic disease.[31] Al Rahimi et al[32] found that during the pandemic, fear and health anxiety were more common in patients taking immunosuppressants or those with chronic diseases (Crohn's disease, cardiovascular

diseases). Kapıkıran et al.[33] revealed that patients' surgical fear varied according to the presence of chronic disease in patients undergoing abdominal surgery. The fact that the presence of chronic disease poses a risk to the surgical process may have caused patients with comorbidities to fear surgical procedures.[34]

The fear of Coronavirus was higher among primary school graduates than among high school graduates. Raslan et al[28] determined that patients with low education levels who underwent elective surgery experienced more COVID-19-related anxiety than patients with high education levels. Al Rahimi[32] revealed that fear and health anxiety were more common in patients with low education levels during the pandemic. The study by Cerda and Garcia[35] determined that educated people experienced less fear. The study conducted by Doğan and Düzel[36] with individuals in society revealed that high school graduates experienced more fear of Coronavirus than individuals with university degrees. The study by Kasapoğlu[37] reported that primary school graduates experienced more fear of Coronavirus than high school graduates. The transformation of access to information during the pandemic[38] may have caused individuals with higher education levels to access and adapt to information more easily.

A positive correlation was revealed between patients' surgical fear and fear of Coronavirus. Doglietto et al[7] determined that one of the important predictors of preoperative anxiety in patients who underwent brain and nervous system surgery during the pandemic was the fear of being infected with Coronavirus. Another study found that 26.8% of patients with high anxiety feared being infected with COVID-19 during their hospital stay.[39] Shih et al[40] reported that surgical procedures decreased by 20% to 30% due to the fear of Coronavirus in patients. Vanni et al[41] stated that surgical procedures were postponed in patients who were planned to undergo surgical treatment for breast cancer on the grounds of the fear of infection due to the pandemic. A study conducted with patients who underwent elective urological surgery found that those who had fear of Coronavirus infection had higher levels of perceived stress in the preoperative period.[31] Another study shows that fear of viruses can affect the decision-making process of patients and may have negative consequences on patient outcomes.[42] The study results reveal that the fear of surgery is related to the fear of Coronavirus.

Conclusion

The pandemic continues to make its effects felt in the health system, as in many areas. At least one third (33%) of patients are very afraid of COVID-19. Perioperative nurses should identify patients' fears of surgery and Coronavirus and support them. Particularly, patients with low education levels and chronic diseases should be carefully evaluated.

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