RESEARCH ARTICLE

CYPRUS
JOURNAL OF MEDICAL SCIENCES

**DOI:** 10.4274/cjms.2021.2021-208
Cyprus J Med Sci 2023;8(2):121-128

# Evaluation of COVID-19 Anxiety and Phobia Levels of the Parents of Pediatric Patients Undergoing Surgery

**Faruk Çiçekci, Mehmet Selçuk Uluer, Mehmet Sargın, Emine Aslanlar, Perihan Şener, Ali Sevgili, İnci Kara**

Department of Anesthesiology, Selçuk University Faculty of Medicine, Konya, Türkiye

## Abstract

**BACKGROUND/AIMS:** The purpose of this study was to evaluate the levels of coronavirus disease-2019 (COVID-19) anxiety and the phobia levels of the parents of pediatric patients who were scheduled to undergo surgery under general anesthesia in Turkey during the COVID-19 pandemic, and to examine the factors affecting these.

**MATERIALS AND METHODS:** The participants were asked to complete a socio-demographic data form, the Coronavirus Anxiety Scale (CAS), and the COVID-19 Phobia Scale (C19P-S). The effects on depression, anxiety, and health anxiety levels of factors such as the socio-demographic characteristics of the children and parents, and the supplementary data of the parents regarding the child's illness were then investigated.

**RESULTS:** In terms of CAS and C19P-S cut-off points, 4.7% (n=7) of the parents scored above the anxiety cut-off point and 17.4% (n=26) scored above the phobia cut-off point. Both CAS and C19P-S scores were higher for female parents, non-working parents, and those with higher education levels compared with male parents, employed parents, and those with lower education levels.

**CONCLUSION:** The results of this prospective, cross-sectional, observational study suggest that being female, non-working, and a having high level of education were risk factors for anxiety and phobia in the parents of pediatric patients related to COVID-19.

**Keywords:** Anxiety, coronavirus, SARS, parents, pediatric, phobia

## INTRODUCTION

A pandemic which originated in the Wuhan region of China in December, 2019 was detected as a new type of coronavirus disease called severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) [coronavirus disease-2019 (COVID-19)]. The COVID-19 pandemic has seriously affected medical practice around the World.[1] Changes in routine clinical approaches in healthcare settings are necessary to reduce the risk of infections in patients, families, and healthcare providers, while balancing the dangers and benefits of delaying or changing routine patient care.[2] The American College of Surgeons (ACS) published guidelines recommending that all elective procedures should be delayed or performed in outpatient surgery centers if possible. The only exceptions are most oncologic and high-precision surgical procedures. According to guidance from the Turkish Ministry of Health, protocols for surgical procedures in Türkiye were changed radically due to the pandemic.[3] However, as delaying surgery for "time-sensitive" and emergency diseases may affect children's growth, development, and their quality of life, the ACS also published guidelines specifically on pediatric surgery, as well as their previous general recommendations, which applied to all surgical subspecialties.[4] As noted in other reports, many families were concerned about whether it was safe to bring their children to the hospital.[5,6]

Both the COVID-19 pandemic and the surgical procedure to be performed affect symptoms of anxiety, fear or acute stress disorder for the children and their families. As the disease spread, investigators

**To cite this article:** Çiçekci F, Uluer MS, Sargın M, Aslanlar E, Şener P, Sevgili A, Kara İ. Evaluation of COVID-19 Anxiety and Phobia Levels of the Parents of Pediatric Patients Undergoing Surgery. Cyprus J Med Sci 2023;8(2):121-128

**ORCID IDs of the authors:** F.Ç. 0000-0002-3248-0745; M.S.U. 0000-0002-5699-8688; M.S. 0000-0002-6574-273X; E.A. 0000-0003-3849-9137; P.Ş. 0000-0003-2418-4652; A.S. 0000-0003-1409-7627; İ.K. 0000-0001-6546-4277.

**Address for Correspondence:** Faruk Çiçekci
**E-mail:** farukcicekci@yahoo.com
**ORCID ID:** orcid.org/0000-0002-3248-0745

**Received:** 19.08.2021
**Accepted:** 12.12.2021

started to emphasize the importance of protecting mental health.[7,8] Identifying factors which contribute to significant preoperative anxiety levels in pediatric patients and their parents can help healthcare professionals choose the most appropriate strategy for anxiety control from a variety of alternative strategies. However, when the literature was examined, no studies had examined both COVID-19 anxiety and the phobia levels of those families with children who received general anesthesia during the COVID-19 pandemic. Therefore, this study was planned to evaluate the COVID-19 anxiety and phobia levels of the parents of pediatric patients who were scheduled to undergo surgery under general anesthesia in Türkiye.

## MATERIALS AND METHODS

This study was a prospective, cross-sectional, observational study. The population of the study consisted of those parents of pediatric patients who were scheduled for surgery under general anesthesia between May, 2020 and September, 2020 at Selçuk University Faculty of Medicine, Department of Anesthesiology and Reanimation. The Selçuk University Faculty of Medicine Ethical Committee approval was received (approval number: 2020/17). Written informed consent was obtained from all participants. This study was registered with the clinical trials registry (www.ClinicalTrials.gov. identifier NCT04631172). The parents of pediatric patients with American Society of Anesthesiologists (ASA) classification I-II, aged 1-12 years who were administered anesthesia to undergo surgery between the specified dates were included in this study without using any sample selection. The parents of those children with ASA III or higher risk, of those expected to have difficult intubation, of those with serious complications related to intraoperative anesthesia (e.g. respiratory depression, myocardial depression, cardiac arrhythmia, bronchospasm, laryngospasm, anaphylactic reaction, hypotension, bleeding), and of those who could not communicate were excluded from this study. The data were obtained from only one of the parents through a face-to-face interview before the child was taken to surgery after the necessary explanations had been made by the researchers. To enable the parents to answer the questions easily, a separate room in the relevant clinic was used for the interviews. The characteristics of the children and the parents, the supplementary data of the parents regarding the child's illness, and their contact information were obtained. The sample size was based on an estimated prevalence of 6.3% determined in the study of Wang et al.[9] In order to reach 95% power at a 5% significance level, the required sample volume for a 4% deviation from this estimated prevalence was calculated to be 142. The sample size allowing for possible data loss was determined to be 155 patients. Power analysis was performed using the "pwr" package in R 3.6.0 (https://www.r-project.org).

### Data Collection Process and Procedure

The Coronavirus Anxiety Scale (CAS), which was developed by Lee[8] and validated in Turkish by Evren et al.[10] was used to evaluate COVID-19 anxiety levels. In the validation study, the Cronbach's alpha of the Turkish version of CAS was 0.87. In the present study, Cronbach's alpha was 0.89. This result of the study showed that the CAS was highly reliable. CAS is a 5-point Likert-type scale. The scale consists of five questions and one dimension. Scoring of the scale is evaluated as 0: never, 1: rarely, less than one or two days, 2: a few days, 3: more than a week, and 4: almost every day in the last two weeks. The total score ranges from 0 to 20. Lee[8] determined a CAS cut-off score of 9 in order to distinguish between those with dysfunctional anxiety and those without anxiety.

The COVID 19 phobia scale (C19P-S) is a 20-item, 4-subdimension (*psychological*, *somatic*, *social* and *economic*) scale in which items are answered in a 5-point response format developed by Arpaci et al.[11] in order to measure the phobias which may develop regarding COVID-19. In the validation study, the Cronbach's alpha of the Turkish version of C19P-S was 0.92. In the present study, Cronbach's alpha was 0.94. The results of this study demonstrated that the C19P-S was exceptionally reliable. The scale items are scored between 1 = "strongly disagree" and 5 = "strongly agree". Sub-dimension scores are obtained by the sum of the points of the answers given to the items belonging to that sub-dimension, while the total C19P-S score is obtained by the total of the sub-dimension scores, ranging between 20 and 100 points. The total scores are obtained by summing the scores of both scales separately (CAS = 0-20, C19P-S = 20-100). Due to the absence of sufficient studies, a cut-off point of 65 was determined.[11] Higher scores indicate greater anxiety levels.

### Statistical Analysis

Statistical analyses were performed using the SPSS 21.0 software (SPSS Institute, Chicago, IL, USA). Parametric data were tested using Student's t-test or ANOVA and the data are presented as means and standard errors with 95% confidence intervals (CI). A p-value $<0.05$ was considered to be statistically significant.

## RESULTS

Of the 155 parents invited onto this study, 149 parents (96%) who agreed to participate completed the questionnaire and so were included in our analysis. Overall, 108 (72%) of the parents participating in this study were female and 41 (28%) were male. The participants' mean age was 33.4±7.5 years. The child group undergoing anesthesia consisted of 65 (44%) girls and 84 (56%) boys whose mean age was 5.6±4.1 years. Further child and parental socio-demographic data and complementary data regarding the parents and the child's disease are shown in Table 1.

Table 2 shows the CAS and C19P-S levels in relation to the socio-demographic data. The mean CAS and C19P-S scores of the parents were 0.24±0.53 and 2.33±0.82, respectively. There were seven (4.7%) parents who exceeded the CAS cut-off level (>9). For C19P-S, there were 26 (17.4%) parents who exceeded the cut-off level (>65).

When the results of the parents according to their gender were evaluated, CAS in females was significantly higher than in males [2.63±0.37, 95% CI: (1.89-3.36)] vs. [0.73±0.27, 95% CI: (0.18-1.28); p=0.002, respectively]. In parallel, female parents (mothers) displayed significantly higher levels of C19P-S than their male counterparts (fathers) [48.52±1.55, (95% CI: 45.45-51.60)] vs. [41.92±2.69, 95% CI: (36.46-7.37); p=0.022, respectively]. Also, as shown in Table 2, highly educated (high school and university) parents had higher CAS (p=0.007) and C19P-S (p=0.037) when compared with those who had lower levels of education (illiterate, primary and middle school). The CAS [2.76±0.39, 95% CI: (1.97-3.54)] and C19P-S [49.70±1.66, 95% CI: (46.16-52.77)] levels of the non-working parents were higher than those of the working parents [CAS: 0.87±0.25, 95% CI: (0.33-1.37) and C19P-S: 41.40±2.03, 95% CI: (37.31-45.49), respectively] (p=0.001, p=0.002, respectively). Finally, there was no statistical difference according to CAS and C19P-S regarding the child's characteristics, age group, place of residence, number of siblings, social security status, the presence of psychological problems, having previously encountered patients with COVID-19, being aware of the child's diagnosis, previous experience of hospitalization, having information about the child's surgery, and requesting information about COVID-19 (p>0.05).

| Table 1. Socio-demographic and complementary characteristics of the parents | | | |
|---|---|---|---|
| **Child's characteristics** | | **n** | **%** |
| Age group | 0-1 | 34 | 22.9 |
| | 2-6 | 56 | 37.6 |
| | >7 | 59 | 39.6 |
| Gender | Female | 65 | 43.6 |
| | Male | 84 | 56.4 |
| Duration of illness (days) | 0-30 | 54 | 36.2 |
| | >30 | 95 | 63.8 |
| Number of hospitalizations | 1 | 77 | 51.7 |
| | >2 | 72 | 48.3 |
| Preoperative hospitalization time (days) | 1 | 104 | 69.8 |
| | 2-6 | 30 | 29.1 |
| | >7 | 15 | 10.1 |
| **Parental characteristics** | | | |
| Age group | <20 | 9 | 6.0 |
| | 20-29 | 45 | 30.2 |
| | 30-39 | 61 | 40.9 |
| | >40 | 34 | 22.9 |
| Gender | Female | 108 | 72.5 |
| | Male | 41 | 27.5 |
| Place of residence | Urban | 93 | 62.4 |
| | Town | 38 | 25.5 |
| | Rural | 18 | 12.1 |
| Number of children | 1 | 42 | 28.2 |
| | 2 | 51 | 34.2 |
| | >3 | 56 | 37.6 |
| Educational status | Illiterate | 7 | 4.7 |
| | Primary school | 41 | 27.5 |
| | Middle school | 38 | 25.5 |
| | High school | 33 | 22.1 |
| | University | 30 | 20.7 |
| Working after the pandemic | Yes | 49 | 32.9 |
| | No | 100 | 67.1 |
| Health insurance status | Yes | 106 | 71.1 |
| | No | 43 | 28.9 |
| The presence of psychological problems | Yes | 16 | 10.7 |
| | No | 133 | 89.3 |
| Have you seen COVID-19 patients before? | Yes | 137 | 91.9 |
| | No | 12 | 8.1 |
| **Parent's information about their child's illness** | | | |
| Knowledge of the child's diagnosis | Yes | 130 | 87.2 |
| | No | 19 | 12.8 |
| Previous experience of hospitalization | Yes | 92 | 61.7 |
| | No | 57 | 38.3 |
| Having information about the child's surgery | Yes | 121 | 81.2 |
| | No | 28 | 18.8 |
| Who provided the information | Nurse | 20 | 13.4 |
| | Anesthesiologist | 16 | 10.7 |
| | Unit doctor | 113 | 75.8 |

**Table 1. Continued**

| Child's characteristics | | n | % |
|---|---|---|---|
| Has enough information been obtained about the child's surgery? | Yes | 127 | 85.2 |
| | No | 22 | 14.8 |
| Requesting information about Coronavirus disease-2019 | Yes | 37 | 24.8 |
| | No | 112 | 75.2 |
| Has sufficient information been obtained about Coronavirus disease-2019 infection? | Yes | 95 | 63.8 |
| | No | 54 | 36.3 |

**Table 2. Comparison of the mean CAS and C19P-S levels within the group according to the socio-demographic and complementary characteristics of the parents**

| CAS | | | | | CP19-S | | |
|---|---|---|---|---|---|---|---|
| | | Mean ± SE | (95% CI) | p | Mean ± SE | (95% CI) | p |
| **Child's characteristics** | | | | | | | |
| Age group | 0-1 | 2.17±0.75 | (0.63-3.72) | 0.771 | 46.55±3.33 | (39.76-53.34) | 0.694 |
| | 2-6 | 2.10±0.40 | (1.29-2.92) | | 46.03±1.81 | (42.39-49.68) | |
| | >7 | 2.13±0.43 | (1.25-3.01) | | 47.71±2.19 | (43.31-52.10) | |
| Gender | Female | 2.06±0.40 | (1.24-2.88) | 0.964 | 44.78±2.02 | (40.74-48.82) | 0.150 |
| | Male | 2.19±0.40 | (1.39-2.98) | | 48.39±1.76 | (44.57-51.91) | |
| Duration of illness (days) | 0-30 | 2.61±0.56 | (1.47-3.74) | 0.340 | 49.33±2.21 | (44.89-53.77) | 0.221 |
| | >30 | 1.86±0.31 | (1.24-2.48) | | 45.38±1.66 | (42.08-48.69) | |
| Number of hospitalizations | 1 | 2.46±0.44 | (1.57-3.36) | 0.377 | 48.28±1.87 | (44.54-52.02) | 0.242 |
| | >2 | 1.77±0.34 | (1.08-2.47) | | 45.25±1.89 | (41.47-49.02) | |
| Preoperative hospitalization time (day) | 1 | 2.49±0.36 | (1.76-3.21) | 0.092 | 47.93±1.71 | (44.52-51.32) | 0.516 |
| | 2-6 | 1.13±0.37 | (0.35-1.91) | | 43.80±2.30 | (39.09-48.50) | |
| | >7 | 1.66±1.02 | (0.53-3.86) | | 45.20±3.62 | (37.41-32.98) | |
| **Parental characteristics** | | | | | | | |
| Age group | <20 | 0.21±0.11 | (0.04-0.36) | 0.063 | 47.28±7.57 | (28.75-65.81) | 0.505 |
| | 20-29 | 2.95±0.63 | (1.68-4.22) | | 50.06±2.54 | (44.94-55.18) | |
| | 30-39 | 2.26±0.40 | (1.44-3.07) | | 48.65±2.14 | (44.37-52.94) | |
| | >40 | 1.35±0.54 | (0.25-2.45) | | 41.55±2.37 | (36.72-46.39) | |
| Gender | Female | 2.63±0.37 | (1.89-3.36) | **0.002*** | 48.52±1.55 | (45.45-51.60) | **0.022*** |
| | Male | 0.73±0.27 | (0.18-1.28) | | 41.92±2.69 | (36.46-47.37) | |
| Place of residence | Urban | 1.97±0.33 | (1.30-2.65) | 0.055 | 48.21±1.61 | (45.00-51.42) | 0.244 |
| | Town | 3.15±0.71 | (1.71-4.60) | | 45.97±3.15 | (39.57-53.37) | |
| | Rural | 0.77±0.40 | (0.06-1.62) | | 41.38±2.69 | (35.70-47.07) | |
| Number of children | 1 | 3.00±0.72 | (1.53-4.46) | 0.125 | 50.52±2.93 | (44.59-56.45) | 0.077 |
| | 2 | 2.21±0.42 | (1.35-3.07) | | 48.66±2.33 | (43.98-53.34) | |
| | >3 | 1.43±0.35 | (0.72-2.14) | | 42.54±1.70 | (39.13-45.96) | |
| Educational status | Illiterate | 1.57±1.02 | (0.92-4.06) | **0.007*** | 38.00±3.83 | (29.15-46.84) | **0.037*** |
| | Primary school | 0.90±0.26 | (0.36-1.44) | | 43.68±2.04 | (39.54-47.81) | |
| | Middle school | 1.50±0.40 | (0.67-2.32) | | 46.65±2.55 | (41.40-51.91) | |
| | High school | 3.12±066 | (1.77-4.47) | | 49.54±3.03 | (43.37-55.72) | |
| | University | 4.07±1.01 | (1.97-6.17) | | 50.11±3.55 | (42.81-57.41) | |
| Working after the pandemic | Yes | 0.87±0.25 | (0.33-1.37) | **0.001*** | 41.40±2.03 | (37.31-45.49) | **0.002*** |
| | No | 2.76±0.39 | (1.97-3.54) | | 49.70±1.66 | (46.16-52.77) | |
| Health insurance status | Yes | 2.29±0.37 | (1.55-3.03) | 0.828 | 46.72±1.51 | (43.72-49.72) | 0.895 |
| | No | 1.74±0.38 | (0.97-2.51) | | 47.70±2.75 | (41.47-52.61) | |
| Any psychological problems | Yes | 2.75±1.05 | (0.51-4.99) | 0.848 | 44.06±5.63 | (32.05-56.07) | 0.169 |
| | No | 2.06±0.29 | (1.47-2.64) | | 47.15±1.34 | (44.49-49.80) | |

**Table 2. Continued**

| | | CAS | | | CP19-S | | |
|---|---|---|---|---|---|---|---|
| | | Mean ± SE | (95% CI) | p | Mean ± SE | (95% CI) | p |
| Have you seen COVID-19 patients before? | Yes | 3.75±1.16 | (1.19-6.30) | 0.081 | 54.33±5.26 | (42.74-65.92) | 0.112 |
| | No | 1.59±0.29 | (1.41-2.57) | | 46.16±1.36 | (43.45-48.86) | |
| **Parent's information about the child's illness** | | | | | | | |
| Knowledge of the child's diagnosis | Yes | 2.26±0.30 | (1.65-2.86) | 0.054 | 47.46±1.47 | (44.53-50.38) | 0.232 |
| | No | 1.26±0.82 | (0.47-3.00) | | 42.42±2.56 | (37.03-47.81) | |
| Previous experience of hospitalizations | Yes | 1.97±0.34 | (1.29-2.66) | 0.587 | 46.47±1.74 | (43.00-49.95) | 0.942 |
| | No | 2.38±0.31 | (1.36-3.40) | | 47.36±2.06 | (43.43-51.50) | |
| Obtaining information about the child's surgery | Yes | 2.17±0.31 | (1.54-2.80) | 0.672 | 46.47±1.48 | (43.54-49.40) | 0.446 |
| | No | 2.03±0.68 | (0.63-3.44) | | 48.55±3.23 | (41.90-55.21) | |
| Who provided the information | Nurse | 2.65±0.93 | (0.69-4.60) | 0.733 | 46.85±3.52 | (39.47-54.22) | 0.979 |
| | Anesthesiologist | 1.12±0.44 | (0.17-2.07) | | 47.50±3.67 | (39.60-55.33) | |
| | Unit doctor | 2.18±0.33 | (1.52-2.84) | | 46.71±1.57 | (43.60-49.83) | |
| Has enough information been obtained about the child's surgery? | Yes | 2.26±0.32 | (1.62-2.86) | 0.144 | 47.37±1.45 | (44.50-30.25) | 0.186 |
| | No | 1.38±0.61 | (0.09-2.67) | | 42.90±3.45 | (35.70-50.10) | |
| Has sufficient information been given about COVID-19 infection? | Yes | 2.70±0.57 | (1.54-3.86) | 0.238 | 51.51±2.98 | (45.45-57.56) | 0.083 |
| | No | 2.13±0.54 | (1.29-2.60) | | 45.26±1.45 | (43.33-52.70) | |
| Requesting information about COVID-19 | Yes | 2.14±0.33 | (1.47-2.82) | 0.724 | 46.31±1.65 | (43.03-49.69) | 0.513 |
| | No | 1.97±0.33 | (1.03-3.23) | | 48.01±2.33 | (42.38-48.15) | |
| Age of parent interviewed | <20 | 0.21±0.11 | (0.04-0.36) | 0.063 | 38.00±3.83 | (29.15-46.84) | 0.055 |
| | 20-29 | 2.95±0.63 | (1.68-4.22) | | 50.06±2.54 | (44.94-55.18) | |
| | 30-39 | 2.26±0.40 | (1.44-3.07) | | 48.65±2.14 | (44.37-52.94) | |
| | >40 | 1.35±0.54 | (0.25-2.45) | | 41.55±2.37 | (36.72-46.39) | |
| Gender of parent | Female | 2.63±0.37 | (1.89-3.36) | 0.002 | 48.52±1.55 | (45.45-51.60) | 0.022 |
| | Male | 0.73±0.27 | (0.18-1.28) | | 41.92±2.69 | (36.46-47.37) | |
| Place of residence | Urban | 1.97±0.33 | (1.30-2.65) | 0.055 | 48.21±1.61 | (45.00-51.42) | 0.244 |
| | Town | 3.15±0.71 | (1.71-4.60) | | 45.97±3.15 | (39.57-53.37) | |
| | Rural | 0.77±0.40 | (0.06-1.62) | | 41.38±2.69 | (35.70-47.07) | |
| Number of children | 1 | 3.00±0.72 | (1.53-4.46) | 0.125 | 50.52±2.93 | (44.59-56.45) | 0.077 |
| | 2 | 2.21±0.42 | (1.35-3.07) | | 48.66±2.33 | (43.98-53.34) | |
| | 3 or more | 1.43±0.35 | (0.72-2.14) | | 42.54±1.70 | (39.13-45.96) | |
| Parental educational status | Illiterate | 1.57±1.02 | (0.92-4.06) | 0.007 | 47.28±7.57 | (28.75-65.81) | 0.607 |
| | Primary school | 0.90±0.26 | (0.36-1.44) | | 43.68±2.04 | (39.54-47.81) | |
| | Middle school | 1.50±0.40 | (0.67-2.32) | | 46.65±2.55 | (41.40-51.91) | |
| | High School | 3.12±066 | (1.77-4.47) | | 49.54±3.03 | (43.37-55.72) | |
| | University | 4.07±1.01 | (1.97-6.17) | | 50.11±3.55 | (42.81-57.41) | |
| Employment status of the parent | 1 | 0.87±0.25 | (0.33-1.37) | 0.001 | 41.40±2.03 | (37.31-45.49) | 0.002 |
| | 2 | 2.76±0.39 | (1.97-3.54) | | 49.70±1.66 | (46.16-52.77) | |
| Social security status of the parent | Working | 2.29±0.37 | (1.55-3.03) | 0.828 | 46.72±1.51 | (43.72-49.72) | 0.895 |
| | Non-working | 1.74±0.38 | (0.97-2.51) | | 47.70±2.75 | (41.47-52.61) | |
| Presence of psychological problems | Present | 2.75±1.05 | (0.51-4.99) | 0.848 | 44.06±5.63 | (32.05-56.07) | 0.169 |
| | Absent | 2.06±0.29 | (1.47-2.64) | | 47.15±1.34 | (44.49-49.80) | |
| Have you seen someone with COVID-19 before | No | 1.59±0.29 | (1.41-2.57) | 0.081 | 46.16±1.36 | (43.45-48.86) | 0.112 |
| | Yes | 3.75±1.16 | (1.19-6.30) | | 54.33±5.26 | (42.74-65.92) | |
| Knowledge regarding the diagnosis of the child | Yes | 2.26±0.30 | (1.65-2.86) | 0.054 | 47.46±1.47 | (44.53-50.38) | 0.232 |
| | No | 1.26±0.82 | (0.47-3.00) | | 42.42±2.56 | (37.03-47.81) | |
| Previous experience of hospitalization | Yes | 1.97±0.34 | (1.29-2.66) | 0.587 | 46.47±1.74 | (43.00-49.95) | 0.942 |
| | No | 2.38±0.31 | (1.36-3.40) | | 47.36±2.06 | (43.43-51.50) | |

**Table 2. Continued**

| CAS | | | | | CP19-S | | |
|---|---|---|---|---|---|---|---|
| | | Mean ± SE | (95% CI) | p | Mean ± SE | (95% CI) | p |
| Information regarding the surgery to be performed | Given | 2.17±0.31 | (1.54-2.80) | 0.672 | 46.47±1.48 | (43.54-49.40) | 0.446 |
| | Not given | 2.03±0.68 | (0.63-3.44) | | 48.55±3.23 | (41.90-55.21) | |
| Source of information | Nurse | 2.65±0.93 | (0.69-4.60) | 0.733 | 46.85±3.52 | (39.47-54.22) | 0.979 |
| | Anesthetist | 1.12±0.44 | (0.17-2.07) | | 47.50±3.67 | (39.60-55.33) | |
| | Doctor | 2.18±0.33 | (1.52-2.84) | | 46.71±1.57 | (43.60-49.83) | |
| Sufficient information given | Sufficient | 2.26±0.32 | (1.62-2.86) | 0.144 | 47.37±1.45 | (44.50-30.25) | 0.186 |
| | Insufficient | 1.38±0.61 | (0.09-2.67) | | 42.90±3.45 | (35.70-50.10) | |
| Have you received information about the COVID-19 transmission? | Yes | 2.14±0.33 | (1.47-2.82) | 0.724 | 46.31±1.65 | (43.03-49.69) | 0.513 |
| | No | 2.13±0.54 | (1.03-3.23) | | 48.01±2.33 | (43.33-52.70) | |
| Have you requested information about COVID-19 | Yes | 2.70±0.57 | (1.54-3.86) | 0.238 | 51.51±2.98 | (45.45-57.56) | 0.083 |
| | No | 1.97±0.33 | (1.29-2.60) | | 45.26±1.45 | (42.38-48.15) | |

CAS: Coronavirus Anxiety Scale, C19P-S: COVID-19 Phobia Scale, mean ± SE: means ± standard error, CI: Confidence interval, *p<0.05, COVID-19: Coronavirus disease-2019.

## DISCUSSION

The major unexpected finding of our study according to both scales was that, despite the increase in the number cases of COVID-19, the parents of children who were going to be anesthetized had low levels of COVID-19 anxiety and phobia levels. However, it was observed that female, non-working, and highly educated parents had higher COVID-19 anxiety and phobia than their male, employed, and poorly educated counterparts.

As the number of COVID-19 cases increases, so does the chance of life-threatening SARS-CoV-2 exposure. This can exacerbate uncertainty and increase concerns about contracting the virus. Individuals are afraid of the virus and worry about the health of their loved ones. Symptoms such as anxiety, depression, fear, stress, and sleep problems have become more common during the COVID-19 pandemic.[12,13] Indeed, the prevalence of depression, anxiety, and post-traumatic stress disorder symptoms were reported as being between 10% and 18% during and after the SARS pandemic.[14] Additionally, the pandemic has triggered fear among individuals, which makes it very important to understand the impact of this crisis on people's mental health.[15] The depression and anxiety levels and rates (23.6% and 45.1%, respectively) are expected findings when considering pandemic-related psychological effects. A comprehensive study from China reported that about 35% of people were psychologically affected by the pandemic.[16] Findings of higher incidences of depression and anxiety in individuals with a history of psychiatric illness may also be associated with the recurrence of psychiatric diseases before and after the pandemic, as shown in previous studies of this type.[17] A recent study by Yuan et al.[18] showed that anxiety in the parents of children hospitalized during the COVID-19 pandemic was higher than before the pandemic. It was surprising that in our study, COVID-19 anxiety remained as low as 4.7% and phobia at 17.4%.

The prevalence of anxiety in females appears to be higher than in males.[19,20] In the COVID-19 pandemic, females have also been reported to have higher levels of anxiety related to the pandemic.[16,21,22] In the study by Zhong et al.[23], even though females had better knowledge of the disease and followed recommendations such as wearing masks and social distancing more than males, the uncertainty of whether the pandemic could be controlled affected them more. In another study, anxiety disorder was seen at a three-times higher level in women than in men during the COVID-19 pandemic.[9] High health anxiety can leave a person vulnerable to negative emotional states such as anxiety and depression. In light of our current knowledge, high levels of anxiety, depression, and health anxiety in women in this study are not an unexpected finding. In the present study, COVID-19 anxiety and phobias among the female parents were higher than in the male parents. This may be a reflection of the increased burden of care responsibilities placed on women.

Some studies demonstrated that non-working parents had more anxiety and fear due to their lower household income.[24,25] The higher CAS and corona phobia levels of the non-workers in this study can be considered to be as a result of the economic conditions in our country on the family.

The results in the literature are contradictory in terms of the relationships between people's knowledge regarding viral pandemics and their health anxiety. Several studies have shown that a higher level of knowledge about the virus is associated with increased anxiety[26,27], whereas other studies found that more information was associated with less anxiety.[28] Wang et al.[29] reported that there was no significant relationship between people's information about the virus and their anxiety. These disparate results may depend on the type, content, source, purpose, and/or scope of the media or information source. In another study, it was reported that mothers with low education levels had difficulty in understanding the reasons for the changes in their children's condition, and therefore their anxiety levels were high.[30] In this study, there appears to be a positive correlation between the parents' higher educational backgrounds such as high school and university and their anxiety and phobia levels. One possible explanation for this could be that as the individual's intellectual level increases, their more detailed understanding of the COVID-19 pandemic and the potential risks of anesthesia may increase their anxiety and phobia. On the other hand, it was interesting that parents with low educational backgrounds had low levels of anxiety and phobia, which may be due to their lack of knowledge.

### Study Limitations

This study has both strengths and limitations. The major strength is that it was the first study to measure COVID-19 anxiety and phobia together; the questionnaires were validated in Turkish and they were

completed in face-to-face interviews. In terms of its limitations, firstly, it was a single-center study, and the study population consisted of a homogeneous region in terms of its Turkish population and it did not include racial/ethnic subgroups. If this study had been conducted in a multicenter fashion, its effectiveness and patient population would have been higher. In this way, parents in cities (such as İstanbul, Ankara) with a high incidence of COVID-19 at the clinical level could have been included in our data. Another issue could be the differences in the COVID-19 process occurring over the period of our study, given its 3-month working time. However, in this process, the fact that COVID-19 data were relatively horizontal in our country may have eliminated any differences caused by potential changes during our study period.

## CONCLUSION

This study found that the COVID-19 anxiety and phobia levels of the parents of pediatric patients who underwent surgery under general anesthesia during the COVID-19 pandemic were low. However, according to socio-demographic variables, it was shown that female parents, non-working parents, and those with a higher level of education were more severely affected by COVID-19 anxiety and phobia than the other parents. Therefore, these variables should be kept in mind in future psychiatric planning.

### MAIN POINTS

- Both the COVID-19 pandemic and the surgical procedure are reflected in the symptoms of anxiety, fear or acute stress disorder of children and their families. However, it was surprising that in our study, COVID-19 anxiety remained as low as 4.7% and phobia at 17.4%.
- Female parents displayed significantly higher levels of C19P-S and CAS than males.
- The CAS levels of non-working parents were higher than those of working parents.

### ETHICS

**Ethics Committee Approval:** The Selçuk University Faculty of Medicine Ethical committee approval was received (approval number: 2020/17).

**Informed Consent:** Written informed consent was obtained from all participants.

**Peer-review:** Externally peer-reviewed.

#### Authorship Contributions

Concept: F.C., Design: F.Ç., Supervision: M.S., İ.K., Fundings: F.Ç., Materials: F.Ç., Data Collection and/or Processing: F.Ç., M.S.U., E.A., P.Ş., A.S., Analysis and/or Interpretation: M.S., Literature Search: M.S.U., M.S., E.A., P.Ş., A.S., İ.K., Writing: F.Ç., Critical Review: İ.K.

### DISCLOSURES

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study had received no financial support.

## REFERENCES

1. Ducournau F, Arianni M, Awwad S, Baur EM, Beaulieu JY, Bouloudhnine M, et al. COVID-19: Initial experience of an international group of hand surgeons. Hand Surg Rehabil. 2020; 39(3): 159-66.
2. Farrell S, Schaeffer EK, Mulpuri K. Recommendations for the Care of Pediatric Orthopaedic Patients During the COVID-19 Pandemic. J Am Acad Orthop Surg. 2020; 28(11): e477-86.
3. American College of Surgeons. COVID-19: Guidance for Triage of Non-Emergent Surgical Procedures [Internet]. American College of Surgeons [cited 2020 Apr 11]. Available from: https://www.facs.org/covid-19/clinical-guidance/triage.
4. American College of Surgeons. COVID-19 Guidelines for Triage of Pediatric Patients [Internet]. American College of Surgeons [cited 2020 Apr 11]. Available from: https://www.facs.org/for-medical-professionals/covid-19/clinical-guidance/elective-case/pediatric-surgery/
5. Davenport M, Pakarinen MP, Tam P, Laje P, Holcomb GW 3rd. From the editors: The COVID-19 crisis and its implications for pediatric surgeons. J Pediatr Surg. 2020; 55(5): 785-8.
6. Children Hospital Los Angeles. https://www.chla.org/blog/hospital-news/covid-19-information-patients-parents-and-visitors Accessed on June 6, 2020.
7. Bakioğlu F, Korkmaz O, Ercan H. Fear of COVID-19 and Positivity: Mediating Role of Intolerance of Uncertainty, Depression, Anxiety, and Stress. Int J Ment Health Addict. 2021; 19(6): 2369-82.
8. Lee SA. Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death Stud. 2020; 44(7): 393-401.
9. Wang Y, Di Y, Ye J, Wei W. Study on the public psychological states and its related factors during the outbreak of coronavirus disease 2019 (COVID-19) in some regions of China. Psychol Health Med. 2021; 26(1): 13-22.
10. Evren C, Evren B, Dalbudak E, Topcu M, Kutlu N. Measuring anxiety related to COVID-19: A Turkish validation study of the Coronavirus Anxiety Scale. Death Stud. 2022; 46(5): 1052-8.
11. Arpaci I, Karataş K, Baloğlu M. The development and initial tests for the psychometric properties of the COVID-19 Phobia Scale (C19P-S). Pers Individ Dif. 2020; 164: 110108.
12. Torales J, O'Higgins M, Castaldelli-Maia JM, Ventriglio A. The outbreak of COVID-19 coronavirus and its impact on global mental health. Int J Soc Psychiatry. 2020; 66(4): 317-20.
13. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 Scale: Development and Initial Validation. Int J Ment Health Addict. 2022; 20(3): 1537-45.
14. Wu KK, Chan SK, Ma TM. Posttraumatic stress, anxiety, and depression in survivors of severe acute respiratory syndrome (SARS). J Trauma Stress. 2005; 18(1): 39-42.
15. Xiang YT, Yang Y, Li W, Zhang L, Zhang Q, Cheung T, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. Lancet Psychiatry. 2020; 7(3): 228-9.
16. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. Gen Psychiatr. 2020; 33(2): e100213. Erratum in: Gen Psychiatr. 2020; 33(2): e100213corr1.
17. Lee AM, Wong JG, McAlonan GM, Cheung V, Cheung C, Sham PC, et al. Stress and psychological distress among SARS survivors 1 year after the outbreak. Can J Psychiatry. 2007; 52(4): 233-40.
18. Yuan R, Xu QH, Xia CC, Lou CY, Xie Z, Ge QM, et al. Psychological status of parents of hospitalized children during the COVID-19 epidemic in China. Psychiatry Res. 2020; 288: 112953.

19. Alexander JL, Dennerstein L, Kotz K, Richardson G. Women, anxiety and mood: a review of nomenclature, comorbidity and epidemiology. Expert Rev Neurother. 2007; 7(11 Suppl): S45-58.

20. Albert PR. Why is depression more prevalent in women? J Psychiatry Neurosci. 2015; 40(4): 219-21.

21. Moghanibashi-Mansourieh A. Assessing the anxiety level of Iranian general population during COVID-19 outbreak. Asian J Psychiatr. 2020; 51: 102076.

22. Jungmann SM, Witthöft M. Health anxiety, cyberchondria, and coping in the current COVID-19 pandemic: Which factors are related to coronavirus anxiety? J Anxiety Disord. 2020; 73: 102239.

23. Zhong BL, Luo W, Li HM, Zhang QQ, Liu XG, Li WT, et al. Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. Int J Biol Sci. 2020; 16(10): 1745-52.

24. Cameron EE, Joyce KM, Delaquis CP, Reynolds K, Protudjer JLP, Roos LE. Maternal psychological distress & mental health service use during the COVID-19 pandemic. J Affect Disord. 2020; 276: 765-74.

25. Ahmed F, Ahmed N, Pissarides C, Stiglitz J. Why inequality could spread COVID-19. Lancet Public Health. 2020; 5(5): e240.

26. Blakey SM, Abramowitz JS. Psychological Predictors of Health Anxiety in Response to the Zika Virus. J Clin Psychol Med Settings. 2017; 24(3-4): 270-8.

27. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors Associated with Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open. 2020; 3(3): e203976.

28. Goulia P, Mantas C, Dimitroula D, Mantis D, Hyphantis T. General hospital staff worries, perceived sufficiency of information and associated psychological distress during the A/H1N1 influenza pandemic. BMC Infect Dis. 2010; 10: 322.

29. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate Psychological Responses and Associated Factors during the Initial Stage of the 2019 Coronavirus Disease (COVID-19) Epidemic among the General Population in China. Int J Environ Res Public Health. 2020; 17(5): 1729.

30. Franck LS, Spencer C. Informing parents about anaesthesia for children's surgery: a critical literature review. Patient Educ Couns. 2005; 59(2): 117-25.