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# THE EFFECTS OF COVID-19 PHOBIA ON QUALITY OF LIFE: A CROSS-SECTIONAL STUDY OF CANCER PATIENTS

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**Abstract – *Objective:*** Cancer patients are defined as a risk group in the COVID-19. It is unknown how COVID-19 phobia affects the quality of life (QoL) in cancer patients who are vulnerable to infections during the COVID-19 pandemic. The purpose of this study was to determine the effects of COVID-19 phobia on QoL in cancer patients.

***Patients and Methods:*** *This descriptive and cross-sectional study was conducted between June 2020 and September 2020 in an Oncology Clinic within a State Hospital in Istanbul. Data were collected by using the following three tools: 1- sociodemographic characteristics, information on cancer diagnosis and treatment, the presence of COVID-19 and isolation measures for protection from COVID-19; 2- participants' COVID-19 phobia; 3- the last tool was on defining the QoL.*

***Results:*** *The results showed that women had higher COVID-19 phobia than men, and marital status and education level had an impact on the QoL. It was observed that the factor affecting the total score of the COVID-19 Phobia Scale was the QoL_Physical score (6.8%), followed by the QoL_Environmental score (3.7%), gender (2.5%), and QoL_Social score (0.8%), respectively.*

***Conclusions:*** *This study addressed that is effectiveness of COVID-19 Phobia on QoL in cancer patients.*

**KEYWORDS:** COVID-19, Phobia, Cancer, Quality of Life.

## INTRODUCTION

COVID-19 is an important public health problem with an increasing number of cases and mortality rates. Despite the measures taken, the disease continued to progress and spread and became an international problem. On March 11, 2020, COVID-19 was declared a pandemic by World Health Organization (WHO)[1]. According to the data of January 9, 2021, 89,849,017 people were diagnosed with COVID-19 worldwide, and 1,930,033 people died due to it[2].

Cancer patients are defined as a risk group in the COVID-19 pandemic. While the advances in cancer disease extend survival time, they lead to increased immunosuppressive sensitivity due to



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the disease or its treatment. Patients are becoming more prone to infections due to this immunosuppression[3-5]. In some research it was reported that cancer patients were more effected than others in pandemic process[6,7].

People often experience various psychological difficulties such as fear, panic or phobia during pandemics. Similar pandemics such as H1N1, SARS, MERS, Ebola and Zika have previously been reported to have serious adverse effects and cause fear and anxiety disorders[8-11]. The pandemic triggers feelings of fear, helplessness, illness and death in individuals. Fear is a primitive emotion that arises in the face of a real or perceived threat[12]. The COVID-19 pandemic raises this fear. The American Psychiatric Association defines phobias as excessive anxiety or fear of an object or situation. This fear and anxiety are limited to the source of phobia. Phobias can trigger other anxiety disorders, leading to suicidal tendencies, major depression, anxiety disorders, and physical, mental or mood disorders[13]. It is thought that COVID-19 phobia may also cause such secondary psychiatric diseases[14].

WHO defines "quality of life" as an individual's perception of his/her position in life in relation to his/her goals, expectations, standards and concerns within the context of his/her culture and value system. It is a comprehensive concept that is complexly influenced by one's physical health, psychological state, personal beliefs, social relationships, and relationships with the obvious characteristics of his/her environment[15]. Determining the quality of life in cancer patients is very important to evaluate the effects of the disease and the interventions applied on the patient and their environment. Assessment of the quality of life by addressing the patient and its environment as a whole will allow us to see the effects of the care to be given to the patient and improve this care[16]. It is unknown how COVID-19 phobia affects the quality of life in cancer patients who are vulnerable to infections during the COVID-19 pandemic. The objective of this study is to determine the effects of COVID-19 phobia on quality of life in cancer patients.

## PATIENTS AND METHODS

### *Design, setting and sample*

This descriptive and cross-sectional was study conducted between June 2020 and September 2020 in an Oncology Clinic within a State Hospital in Istanbul. The population of the study involved cancer patients who applied to an Oncology Outpatient Clinic within a state hospital in Istanbul. The sample of the study consisted of 414 patients selected by convenience sampling method among the individuals who applied to the Outpatient Oncology Clinic and accepted to participate in the study. Participant eligibility criteria included the following:

- being 18 years old and over;
- having the capability to use WhatsApp application on mobile phone;
- having no apparent cognitive impairment;
- being covered by health insurance;
- not having terminal-stage cancer.

## INSTRUMENTS

For this study, data were collected by sending online surveys via the WhatsApp application. The researcher contacted the patients to determine whether they met inclusion criteria. The researcher explained to the purpose of the study and the confidentiality of the data processing to the participants. The researcher also explained that the participant had the freedom to decide whether to participate and to withdraw from the study. Then online survey was sent to the mobile phones of participants who agreed to participate in the study. It took 15-20 minutes for participants to complete the questionnaires.

The online form contained three parts. The first part included sociodemographic characteristics, information on cancer diagnosis and treatment, the presence of COVID-19 infection in herself/himself or their families and isolation measures for protection from COVID-19. The second part included participants' COVID-19 phobia. The last was on defining the quality of life. Sociodemographic characteristics were evaluated based on gender, age, marital status, educational status, and health status. The information on cancer diagnosis was evaluated via two questions: 'How many years have you been treated?' and 'What is the type of treatment you have received before for your current illness?'. The presence of COVID-19 infection in herself/himself or their families was evaluated via two questions 'Have you been diagnosed with COVID-19 in the past?' and 'Do you have any relatives diagnosed with COVID-19?'. Isolation measures to protect from COVID-19 was evaluated with six questions.

COVID-19 Phobia was measured using a valid and reliable scale developed by Arpaci et al[14]. All scales had likert response options where 1=strongly disagree to 5=strongly agree. The scale, which consists of 20 questions and has 4 sub-scales, include psychological, somatic, social and economics information. The sub-scale scores were obtained

by the total score of the answers given to the items of that sub-scale. The total scale was obtained by the sum of the sub-scale scores. COVID-19 phobia of the patients was evaluated through the scale ranging from 20 to 100 points and showing that the level of COVID-19 phobia rises as the score increases. Psychological sub-dimension of the scale contained 6 items (alpha= 0.87). Somatic sub-dimension of the scale contained 5 items (alpha= 0.89). Social sub- dimension of the scale contained 5 items (alpha= 0.85). Economic sub-dimension of the scale contained 4 items (alpha= 0.90).

Quality of life was measured using a valid and reliable scale developed by Eser et al[17]. There are 27 questions in the scale used to measure the physical, mental, social and environmental well-being of individuals. Patients' responses were calculated separately for each domain. A rating of 4-20 was performed for each domain. Patients' quality of life was evaluated through the scale, which showed that the quality of life improved as the score increased. Physical sub-dimension of the scale contained 7 items (alpha=0.83). Mental sub-dimension of the scale contained 6 items (alpha= 0.66). Social sub-dimension of the scale contained 3 items (alpha= 0.53). Environmental well-being of individuals contained 8 items (alpha= 0.73). The 27th question of the scale is a national question and is evaluated within the environmental domain (alpha=0.73).

### *Ethical Considerations*

This study was approved by the University of Health Sciences Hamidiye Scientific Research Ethics Committee (Document Date and Number: 09/07/2020-E.22009. Registration number: 20/239.). The consent of the patients who accepted to be included in the study was obtained through the informed consent form and the principles of Declaration of Helsinki were strictly followed to protect participants' right.

### *Statistical Analysis*

A descriptive analysis of the data is reported in terms of the frequency, mean, and standard deviation. The homogeneity of the scores of both groups was analyzed by the Kolmogorov-Smirnov test, Levene's test. Variance analysis, the Pearson chi-squared test were used mean score difference between groups measures, and Student's *t*-test was used for independent groups to determine the difference between the results of the measured variables. Correlation and multilinear regression analysis (stepwise method) was used as further analysis. The significance level was set at $p < .05$. Analyses were performed using the Statistical Package for the Social Sciences (SPSS Inc., Version 21.0; IBM, Armonk, NY, USA).

## RESULTS

A total of 414 participants were involved and investigated in this study. Participants sociodemographic characteristics are shown in Table 1. The mean age of the participants was 56.76 years (SD = 11,98). Most of the participants were female (58.9%), married (81.4%), had completed secondary or lower education (58%), were not actively employed (83.6%), perceived their income level as moderate (52.7%) and perceived their health status level as moderate (50%) [Table 1].

**TABLE 1.** Demographic Characteristics of Participants (N=414).

| *Variables* | | *n (%)* |
|---|---|---|
| ***Age, Years, SD (Median)*** | 56.76±11.98 (58) | |
| ***Gender*** | Female | 244 (58.9) |
| | Male | 170 (41.1) |
| ***Marital status*** | Married | 337 (81.4) |
| | Single | 77 (18.6) |
| ***Educational Status*** | Secondary school and lower | 240 (58) |
| | High school and higher | 174 (42) |
| ***Employment status*** | Yes | 68 (16.4) |
| | No | 346 (83.6) |
| ***Perception of Income Status*** | Poor | 63 (15.2) |
| | Moderate | 218 (52.7) |
| | Good | 133 (32.1) |
| ***Perception of Health Status*** | Poor | 110 (26.6) |
| | Moderate | 207 (50.0) |
| | Good | 97 (23.4) |

Most of the participants (30.2%) who had a disease other than cancer (96%) had chronic diseases. The majority of the participants have been receiving treatment from 0 to 5 years (76%), and chemotherapy is the most commonly used treatment in this group (58.7%). While only one of the participants in the study had positive COVID-19 test result, it was observed that 15.2% of the participants had people, diagnosed with COVID-19, around them. Considering the level of knowledge of individuals on COVID-19 disease, 99.5% of them follow local information sources on COVID-19 and the local course of existing COVID-19 cases, and 99% know the signs and symptoms of COVID-19, and 99.5% of them pay attention to personal protective measures to protect against COVID-19. 99.5% of the patients report that they know how home hygiene should be, and 99.5% know the precautions they should take if they get the disease.

When the scores obtained by the participants of the study from the COVID-19 Phobia Scale were examined, it was seen that 20.84 ± 4.82 points from the psychological sub-scale, 15.84 ± 4.42 points from the somatic sub-scale, 16.81 ± 4.11 points from the social sub-scale,12.63 ± 3.74 points from the economic sub-scale, and 66.14 ± 16.12 points from the total of the scale were scored. Considering the scores of individuals in the quality of life scale, it was revealed that 18.3 ± 3.32 points from the psychological sub-scale, 9.3 ± 2.4 points from the social relations sub-scale, 26.03 ± 5.54 points from the environment sub-scale, and 21.22 ± 5.6 points from the physical health sub-scale were scored.

The relationship between the socio-demographic characteristics of the individuals participating in the study and the COVID-19 phobia and quality of life scores is shown in Table 3. When the total score and sub-scale scores of COVID-19 phobia scale were compared by gender, it was found that women got significantly higher scores than men in the total score and all sub-scales of the COVID-19 phobia scale ($p$ <0.05). When the variable of being employed was compared with the total score and sub-scale scores of the COVID-19 phobia scale, it was found that the unemployed individuals got higher scores from the somatic and economic sub-scales of the COVID-19 phobia scale, and this difference between them was statistically significant ($p$ <0.05). When the perception of health status and the COVID-19 phobia was compared, it was observed that there was a statistically significant relationship between psychological, somatic, economic and social sub-scales, and those who perceived their health status as poor had higher level of COVID-19 phobia. There were no statistically significant differences between the variable of having people diagnosed with COVID-19 in close environment and the duration of cancer treatment and COVID-19 phobia ($p$> 0.05). When the sociodemographic variables and the scores of the quality of life sub-scales were compared, it was seen that single individuals had significantly lower scores than married ones in the social sub-scale; the patients, who are secondary school graduates or have lower education level, got significantly lower scores than the patients, who are high school graduates or have higher education level, in all of the sub-scales (environmental, social, psychological, physical) of the quality of life scale; the unemployed individuals got significantly lower scores than the employed ones in the sub-scales of the quality of life scale (environmental, social, psychological, physical) ($p$ <0.05). It was found that there was no significant difference between other variables and score of quality of life sub-scales.

Multiple linear stepwise regression analysis was performed to explain the independent factors affecting the total score of the COVID-19 Phobia Scale [Table 4]. As a result of the analysis, four significant models were formed. The stepwise method was used to see how much each significant independent variable contributed to the model. This change can be seen on the change line of the sum of squares (R2) [Table 4]. Model 4, which includes all significant independent variables, accounts for 13.9% of the total score of the COVID-19 Phobia Scale. It was observed that the factor affecting the total score of the COVID-19 Phobia Scale the most was the QoL_Physical score (6.8%), followed by the QoL_Environmental score (3.7%), gender (2.5%), and QoL_Social score (0.8%), respectively [Table 4]. When the relationship between the total score of the COVID-19 Phobia Scale and the scores of the QoL sub-scales was analyzed, it was seen that there was an inverse correlation between QoL_general health, QoL_social and QoL_physical sub-scales [Table 2].

**TABLE 2.** Results of Correlation Between Total Score of COVID-19 Phobia Scale and Quality of Life Sub-Scales

| | *r* | *p-value* |
|---|---|---|
| COVID-19 Phobia Scale_Total | 1 | |
| QoL_General health | -0.204 | <0.001 |
| QoL_Psychological | -0.090 | 0.069 |
| QoL_Social | -0.100 | 0.041 |
| QoL_Environmental | -0.085 | 0.084 |
| QoL_Physical | -0.261 | <0.001 |

**TABLE 3.** Relationships Between Socio-Demographic Characteristics of Patients with COVID-19 Phobia and Quality of Life.

| *Characteristics* | | *COVID-19 Phobia* | | | | | *Quality of Life* | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | *Psychological* | *Somatic* | *Social* | *Economic* | *Total* | *Psychological* | *Social* | *Environmental* | *Physical* |
| ***Gender*** | | | | | | | | | | |
| Female | 243 (68.7±16.58) | 21.6 ±4.81 | 16.4±4.63 | 17.4 ±4.24 | 13.2 ±3.86 | 68.7±16.58 | 18.3±3.14 | 9.2±2.38 | 26.1±5.46 | 20.9±5.34 |
| Male | 171 (62.4±14.72) | 19.7±4.63 | 15±3.96 | 15.95 ±3.77 | 11.7±3.35 | 62.4 ± 14.72 | 18.2±3.57 | 9.3±2.45 | 25.9±5.66 | 21.6±5.96 |
| Statistics | | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*=.750 | *p*=.729 | *p*=.757 | *p*=.228 |
| | | *t*=3.893 | *t*=3.329 | *t*=3.690 | *t*=4.406 | *t*=4.064 | *t*=0.319 | *t*=-0.346 | *t*=.309 | *t*=-1.206 |
| ***Marital status*** | | | | | | | | | | |
| Single | 77(66.4±17.33) | 20.8±5.06 | 15.8±4.84 | 16.8±4.41 | 12.9±4.04 | 66.4±17.33 | 18.4±3.85 | 8.74±2.50 | 25.6±5.85 | 20.9±6.26 |
| Married | 337( 66.0±15.85) | 20.8±4.77 | 15.8±4.32 | 16.8±4.05 | 12.5±3.67 | 66.0±15.85 | 18.2±3.19 | 9.43±2.37 | 26.1±5.47 | 21.3±5.45 |
| Statistics | | *p*=.952 | *p*=.984 | *p*=.904 | *p*=.449 | *p*=.846 | *p*=.768 | *p*=.023* | *p*=.470 | *p*=.579 |
| | | *t*=-0.060 | *t*= 0.020 | *t*=0.121 | *t*=0.758 | *t*=0.194 | *t*=0.296 | *t*=-2.279 | *t*=-0.724 | *t*=-0.555 |
| ***Education*** | | | | | | | | | | |
| Secondary school and lower | 240 (66.7±16.11) | 20.8±4.83 | 16.1±4.37 | 16.8±4.09 | 12.8±3.61 | 66.7±16.11 | 17.1±2.79 | 8.64±2.35 | 23.9±5.06 | 19.6±5.49 |
| High school and higher | 174 (65.3±16.14) | 20.8±4.81 | 15.3±4.45 | 16.7±4.15 | 12.3±3.89 | 65.3±16.14 | 19.8±3.35 | 10.2±2.18 | 28.9±4.86 | 23.4±4.99 |
| Statistics | | *p*=.894 | *p*=.063 | *p*=.857 | *p*=.132 | *p*=.387 | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* |
| | | *t*=-0.134 | *t*=1.863 | *t*=0.181 | *t*=1.511 | *t*=0.866 | *t*= -8.758 | *t*= -6.861 | *t*= -9.967 | *t*= -7.249 |
| ***Employment status*** | | | | | | | | | | |
| Yes | 68(63.5±16.21) | 20.5±5.00 | 14.8±4.56 | 16.4±4.06 | 11.7±3.84 | 63.5±16.21 | 20.0±4.04 | 10.5±2.38 | 28.9±5.94 | 24.5±5.17 |
| No | 346(66.6±16.07) | 20.9±4.79 | 16.0±4.37 | 16.8±4.12 | 12.8±3.70 | 66.6±16.07 | 17.9±3.05 | 9.05±2.33 | 25.4±5.28 | 20.5±5.46 |
| Statistics | | *p*=.534 | *p*=.039 | *p*=.391 | *p*=.037 | *p*=.146 | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* |
| | | *t*=-0.622 | *t*=-2.067 | *t*=-0.859 | *t*=-2.096 | *t*=-1.457 | *t*=4.130 | *t*=4.891 | *t*= 4.880 | *t*=5.517 |
| ***Perception of Income Status*** | | | | | | | | | | |
| Poor | 63(67.1±15.8) | 20.7±4.72 | 16.2±4.35 | 16.8±3.98 | 13.3±3.60 | 67.1±15.8 | 15.8±3.14 | 6.85±2.05 | 19.6±4.35 | 15.9±5.38 |
| Moderate | 218(65.4±16.3) | 20.5±4.92 | 15.7±4.47 | 16.6±4.16 | 12.4±3.72 | 65.4±16.3 | 17.8±2.83 | 9.24±2.09 | 25.4±4.31 | 21.2±5.17 |
| Good | 133(66.7±15.9) | 21.2±4.69 | 15.8±4.39 | 17.1±4.11 | 12.5±3.82 | 66.7±15.9 | 20.1±3.18 | 10.5±2.13 | 29.9±4.57 | 23.7±4.55 |
| Statistics | | F=.878 | F=.349 | F=.567 | F=1.317 | F=.446 | F=48.301 | F=66.184 | F=121.838 | F=52.455 |
| | | *p*=.417 | *p*=.705 | *p*=.568 | *p*= .269 | *p*=.641 | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* |
| ***Perception of Health Status*** | | | | | | | | | | |
| Poor | 110(71,3±15,8) | 21.9±4.61 | 17.3±4.24 | 18.0±4.09 | 14.1±3.63 | 71.3±15.8 | 15.7±2.75 | 7.11±2.04 | 21.3±4.82 | 14.7±4.44 |
| Moderate | 207(64.5±15.9) | 20.3±5.01 | 15.4±4.34 | 16.4±4.05 | 12.3±3.54 | 64.5±15.9 | 18.1±2.49 | 9.40±1.79 | 25.9±3.85 | 22.0±3.25 |
| Good | 97(63.6±15.6) | 20.7±4.47 | 14.9±4.45 | 16.3±4.04 | 11.5±3.78 | 63.6±15.6 | 21.4±2.78 | 11.5±1.63 | 31.5±4.28 | 26.8±3.12 |
| Statistics | | F=3.970 | F=8.797 | F=6.441 | F=14.166 | F=8.206 | F=123.543 | F=153.304 | F=148.987 | F=301.176 |
| | | *p*=.020 | *p*<0.001* | *p*=.002* | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* | *p*<0.001* |

**TABLE 4.** Multiple Linear Regression Results of Total Score of COVID-19 Phobia Scale (Stepwise method).

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---|---|---|---|---|---|---|---|---|
| | B (95% CI) | p-value | B (95% CI) | p-value | B (95% CI) | p-value | B (95% CI) | p-value |
| QoL_Physical | -0.751 (-1.020,-0.482) | <0.001 | -1.453 (-1.878,-1.028) | <0.001 | -1.368 (-1.790,-0.946) | <0.001 | -1.572 (-2.038,-1.105) | <0.001 |
| QoL_Environmental | | | 0.906 (0.476, 1.336) | <0.001 | 0.831 (0.405, 1.258) | <0.001 | 0.598 (0.114, 1.082) | 0.016 |
| Gender | | | | | -5.229 (-8.209,-2.248) | 0.001 | -5.226 (-8.195,-2.256) | 0.001 |
| QoL_Social | | | | | | | 1.133 (0.012, 2.255) | 0.048 |
| Constant | 82.086 | | 73.408 | <0.001 | 80.933 | <0.001 | 80.787 | <0.001 |
| $R^2$ | 0.068 | | 0.106 | | 0.131 | | 0.139 | |
| $\Delta R^2$ | 0.068 | | 0.037 | | 0.025 | | 0.008 | |
| Variance | 30.178 | <0.001 | 24.252 | <0.001 | 20.561 | <0.001 | 16.518 | <0.001 |

## DISCUSSION

COVID-19 affects health systems with the increasing number of cases and deaths every day and causes anxieties about this health crisis[18]. The fear and anxiety associated with the coronavirus have led to changes in all areas of life. Most healthcare organizations around the world are implementing a variety of methods to reduce viral transmission and allocate resources appropriately. The first of these methods is to treat high-risk patients at home, which increase the risk and mortality of COVID-19 infection, and limit hospital visits as much as possible. However, since the delay in the diagnosis and treatment of cancer, which is in the risky disease group, will lead to the progression of the disease and serious life-threatening consequences, the recommendation of many scientific institutions is that the diagnosis and treatment of cancer patients must be performed[19]. In this study, the COVID-19 phobia experienced by cancer patients during the pandemic process and the effects of this phobia on the quality of life were investigated. The results of the study explain some important variables that indicate the levels of phobia COVID-19 experienced by cancer patients and how this condition affects their quality of life. According to the findings of the study, cancer patients have higher levels of knowledge of COVID-19 measures; women have higher level of COVID-19 phobia than men; marital status and education level have an impact on the quality of life; and physical quality of life, environmental quality of life and social quality of life and gender are the independent variables that affect the COVID-19 phobia scale score the most. In addition, a significant inverse correlation was found between the total score of COVID-19 phobia and QoL_social, QoL_general and QoL_physical sub-scales.

In the COVID-19 pandemic, cancer patients experience anxiety, fear and panic about the treatment processes and the risk of getting COVID-19. Cancer patients' fear of coronavirus also affects their attitudes towards cancer treatment[20]. In our study, it was seen that COVID-19 phobia is above the average level (Mean=66.14±16.12). Similar to the findings of our study, a study by Qian et al[21] that was performed during the COVID-19 pandemic demonstrated that more than half of cancer patients had anxiety, depression, or COVID-19 related fear. Likewise, Güven et al[22] also found that 90% of cancer patients experienced moderate and severe fear, while Ng et al[23] also revealed that 66% of cancer patients was afraid of COVID-19, and Jeppesen et al[24] reported that 9% of cancer patients avoided applying to the hospital due to fear of COVID-19, and 80% reported that they were anxious about getting COVID-19. Most of the cancer patients are afraid of all kinds of conditions that may hinder the treatment process, and therefore their quality of life decreases[25]. This fear is due to the life-threatening nature of the disease, and patients also have problems adapting to medical treatment with reduced quality of life[26]. According to Karacin et al[27], there are many anxiety triggers for oncological patients. Cancer' itself is the most important of these triggers. Patients are afraid that COVID-19 will adversely affect the course and effectiveness of their treatment. This fear causes a decrease in the quality of life of patients. According to Garassino et al[28] COVID-19 increases mortality in cancer patients. For this reason, fear and anxiety in cancer patients are an expected outcome. The inability of patients to manage their fear and anxiety also reduces their quality of life.

In our study, some variables affecting COVID-19 phobia were identified. In our study, it was found that female patients had higher level of COVID-19 phobia than male patients. When the studies in the literature were examined, it was seen that similar to our findings, women experienced more anxiety, fear and anxiety about COVID-19 than men. In the study by Sigorski et al[29] it was discovered that female patients had higher fear and anxiety against COVID 19 than men, and the highest anxiety level was in patients with breast cancer and the lowest anxiety level was in patients with lung cancer. These results are due to the fact that most of the patients with breast cancer are women and most of the patients with lung cancer are men. Jeppesen et al[24] found that women with cancer are more anxious about COVID-19 than men.

In this study, a significant relationship was found between marital status, education level, employment status and quality of life scale scores. Similar to the results of our study, the study by Ciążynska et al[30] determined that living alone and having economic difficulties during the COVID-19 pandemic process reduced the quality of life in cancer patients. Falcone et al[31] similar to the findings of our study, noted that women had lower quality of life than men. Jeppesen et al[24] found that those who suffered from COVID-19 anxiety had lower quality of life. In our study, it was found that there was a negative correlation between COVID-19 phobia and the quality of life sub-scales, and that the quality of life decreased as the fear increased. The impact on quality of life (QoL) is considered important by physicians and patients and is closely related to progression of cancer. During the pandemic period, cancer patients are faced with a serious dilemma, since staying at home could increase the tumour progression, while visiting the hospital for cancer treatment could increase the COVID-19 infection risk[30]. Quality of life is the satisfaction that an individual gets from life or the benefit he/she obtains from treatment and care. There are many factors that affect the quality of life of patients such as the need for help in daily life activities, social status, economic factors, educational status, age, marital status, psychological factors and the negative progress of the treatment of the disease. In addition, changes in the functional state of the patient also affect the quality of life. Cognitive problems of the patients decrease in social relations, deterioration of health status, frequent hospitalization and receiving treatment in an unsuitable environment affect the quality of life[32,33]. In this context, the COVID-19 process is thought to be an important factor affecting the quality of life of patients.

## LIMITATIONS

The results of the research reflect the experiences and opinions of oncology patients admitted to only one Oncology Clinic within one State Hospital for treatment purposes in the COVID-19 process in Turkey. Research data is limited only to responses to survey items. Studies on larger sample groups can contribute to gaining more information about oncology patients' experiences and views in the COVID-19 process.

## CONCLUSION

This study addressed an important health issue such as the effectiveness of COVID-19 Phobia on quality of life in cancer patients which has been underexplored. In this study, it was found that cancer patients had high levels of knowledge of COVID-19 measures, and women had higher COVID-19 phobia than men, and marital status and education level had an impact on the quality of life. The results showed that patients need that the problems negatively affecting their quality of life due to COVID-19 are solved, and that appropriate physical conditions for the continuity of their treatment are provided, and that counselling is ensured to manage the process. The hospitals where patients receive treatment can be reviewed in terms of the current situation, and comprehensive assessments of their physical competence can be made. The findings of our study support the need for further research on this issue. A good understanding of the factors that may explain individual differences between cancer and COVID-19 phobia and quality of life will help to create individualized psycho-oncological supportive care and tele-health programs during the pandemic.

**Ethical Committee Approval:**
This study was approved by the University of Health Sciences Hamidiye Scientific Research Ethics Committee (Document Date and Number: 09/07/2020-E.22009. Registration number: 20/239.).

**Informed Consent:**
The consent of the patients who accepted to be included in the study was obtained through the informed consent form and the principles of Declaration of Helsinki were strictly followed to protect participants' right.

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**Conflict of interest:**
The authors declare that they have no conflict of interest.

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