

Evaluation of the Fear of Covid-19 and Well-being of Patients with Cancer and Caregivers

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ABSTRACT

Purpose: The effects of Covid-19 pandemic on physical health are the focus of attention around the world but the effects on psychological health shouldn't be ignored. It's known that patients with cancer are concerned due to being more susceptible to infections. The difficulties experienced by patients and caregivers during the pandemic put also their well-being at risk. Therefore, this study aimed to determine the impacts of Covid-19 pandemic on fear and well-being of patients with cancer and caregivers.

Methods: This descriptive study was carried out with 136 cancer patients and 142 caregivers at three university hospitals. Participant Information Form, the Fear of Covid-19 Scale and the Flourishing Scale were used for data collection.

Results: The mean score of the Fear of Covid-19 Scale of patients and caregivers were 19.6 ± 6.6 , and 20.8 ± 6.9 respectively. The mean score of the Flourishing Scale were 42.1 ± 9.9 and 42.1 ± 9.5 respectively. It was determined that caregivers who are female and have lower income had higher fear of Covid-19. The well-being of patients with cancer who were single, had higher income, and had higher education level were higher. The well-being of caregivers who were unemployed was lower.

Conclusions: The psychosocial support given to patients and caregivers, whose importance has increased in the pandemic, shouldn't be considered separately from medical treatment. In particular, the support given to people who are more affected by the negative consequences of the pandemic should be increased.

Keywords: caregivers, COVID-19, fear, mental health, patients, psychological well-being.

Kanser Hastalarının ve Bakım Verenlerin Covid-19 Korkusu ve İyilik Halinin Değerlendirilmesi

ÖZET

Amaç: Covid-19 pandemisinin fiziksel sağlık üzerindeki etkileri tüm dünyada ilgi odağı olmakla birlikte mental sağlık üzerindeki etkileri de göz ardı edilmemelidir. Kanser hastalarının enfeksiyonlara karşı daha duyarlı olmaları nedeniyle endişe duydukları bilinmektedir. Pandemi sürecinde hasta ve bakım verenlerin yaşadığı zorluklar, iyilik hallerini riske atmaktadır. Bu nedenle bu çalışmada Covid-19 pandemisinin, kanserli hastaların ve bakım verenlerin korku ve iyilik hali üzerindeki etkilerinin belirlenmesi amaçlandı.

Yöntem: Tanımlayıcı tipte olan bu çalışma, üç üniversite hastanesinde 136 kanser hastası ve 142 bakım veren ile gerçekleştirildi. Veri toplama aracı olarak Katılımcı Bilgi Formu, Covid-19 Korku Ölçeği ve İyilik Hali Ölçeği kullanıldı.

Bulgular: Hasta ve bakım verenlerin Covid-19 Korkusu Ölçeği puan ortalaması sırasıyla $19,6 \pm 6,6$ ve $20,8 \pm 6,9$ idi. İyilik Hali Ölçeği puan ortalaması sırasıyla $42,1 \pm 9,9$ ve $42,1 \pm 9,5$ idi. Kadın ve düşük geliri bakım verenlerin Covid-19 korkusunun daha yüksek olduğu belirlendi. Bekar, gelir düzeyi ve eğitim düzeyi yüksek olan kanser hastalarının iyilik hali daha yüksekti. Bakım verenler içerisinde çalışmayanların iyilik hali daha düşüktü.

Sonuç: Pandemi sürecinde önemi artan, hasta ve bakım verenlere verilen psikososyal destek tıbbi tedaviden ayrı düşünülmemelidir. Özellikle pandeminin olumsuz sonuçlarından daha fazla etkilenen kişilere verilen destek artırılmalıdır.

Anahtar Kelimeler: bakım verenler, COVID-19, hastalar, korku, psikososyal iyilik hali, ruh sağlığı.

The coronavirus disease of 2019 (Covid-19), which has been affecting all aspects of human society, is primarily considered a viral respiratory and vascular disease cause of its causative agent SARS-CoV-2 mainly targets the respiratory and vascular systems (1). Since being declared as a pandemic by the World Health Organisation (WHO), nearly 760 million cases and more than six million deaths confirmed as of March 2023 (2).

While the effects of the outbreak on physical health are the focus of attention around the world, the effects of the outbreak on psychological health shouldn't be ignored. The rapid transmission of Covid-19, the emergence of fatal results and various precautions taken pose a risk in terms of adversely affecting psychosocial health (3). The pandemic might have effect on psychosocial health due to uncertainty, public restrictions, social distance and changes in our daily lives. Previous studies showed that psychological burdens such as distress, anxiety, social isolation and depression increase during the pandemic, also quarantine created psychological burden for those who cannot or are not allowed to participate in social life (4,5).

Patients with cancer are often more susceptible to infections due to malignancy itself, immunosuppressive agents or chemotherapy (6). It's reported that this situation increases the incidence and prevalence of Covid-19 infection in patients with cancer compared to the general population and the presence of comorbidities also increases the risk of Covid-19 complications (7,8). The concerns of cancer patients about the pandemic have increased with the rapid increase in the number of Covid-19 cases (9). In a study conducted at the beginning of the pandemic, it was found that 66% of patients with cancer, 72.8% of caregivers had fear of Covid-19 and caregivers were more fearful than patients about how Covid-19 might affect patients' treatment (10). Fear is a characteristic feature of infectious diseases and is directly related to the rate and environment of transmission, as well as morbidity and mortality. It's stated that individuals cannot think healthily while reacting against Covid-19 with high level of fear (11). In addition, health professionals have redesigned the treatment process to reduce the negative effects of the Covid-19 pandemic on patients undergoing cancer treatment (12). Another circumstance that worried patients is the limitation of social support, which is very important part of the treatment process within the scope of social distance measures (13). This caused anxiety, depression and feelings of loneliness for patients with cancer who pay more attention to social distance compared to the general population even before the pandemic (5,6).

The difficulties experienced by patients with cancer during the pandemic put their well-being at risk (14,15). Psychological well-being is defined as managing responses to existential challenges in life (such as pursuing meaningful goals, and establishing relationships with others) (16). Kelly et al. (17) reported that patients with low well-being reported higher feelings of tension, anxiety, and insecurity. It's known that in order to manage the long-term effect of cancer treatment, well-being of people living with disease should be supported as well as the surveillance and treatment of the disease (18). In a study conducted with the participation of adults living in Türkiye showed that there was negative relationship between the fear of Covid-19 and well-being and an increase in perceptions of the participants about fear of Covid-19 decreased their wellbeing (11).

This study aims;

1) to determine the fear of Covid-19 and wellbeing of patients with cancer and caregivers, and 2) to determine the associated factors with fear of Covid-19 and wellbeing of patients with cancer and caregivers.

MATERIAL AND METHOD

Study Design and Sample

This descriptive study was conducted between January 2021- June 2021 at outpatient chemotherapy units of three university hospitals in Istanbul and Ankara, Türkiye. Third wave of pandemic was occurred in Türkiye when this study was conducted.

Inclusion criteria for patients are being older than 18 years old, diagnosed with cancer, receiving chemotherapy, able to understand Turkish and volunteered to participate. Inclusion criteria for caregivers are being older than 18 years old, being caregivers of patients with cancer receiving chemotherapy, able to understand Turkish and volunteered to participate. There is no mutual dependence between patients and caregivers. The caregivers of the patients whose patients could not participate or didn't agree to participate were able to participate in the study.

Sample size was calculated based on power analyses using the formula at <https://sample-size.net/correlation-sample-size/>. Given $\alpha = 0.05$, power $(1-\beta) = 0.90$, 95% confidence interval and predicting that there would be a significant correlation ($r=0.30$) between Covid-19 fear and well-being scale scores sample size was calculated as 113. This study was completed with 136 patients with cancer and 142 caregivers.

Measures

Participant Information Form; this was developed by the researchers in the line with the literature (13,19,20). This form consists of 21 questions for patients and 20 questions for caregivers regarding sociodemographic, medical characteristics (age, gender, education level, marital status, patient's cancer type and stage, caregivers' relationship with the patient etc.) and Covid-19 experiences and expectations from health professionals.

Fear of Covid-19 Scale

The Fear of Covid-19 Scale was developed by Ahorsu et al. (21) to determine the psychological impact of the Covid-19 pandemic on people. The scale is a 5-point Likert type and consists of 7 items. The total score from the scale ranges from 7 to 35. An increase in the score of scale means an increase in the fear of Covid-19 pandemic. The scale includes items such as "I am most afraid of coronavirus", "It makes me uncomfortable to think about coronavirus" and "I am afraid of dying due to coronavirus". Turkish validity and reliability of the Fear of Covid-19 Scale was conducted by Satıcı et al. (3) and Cronbach's alpha was found 0.84. In this study, it was found 0.89.

Flourishing Scale

The Flourishing Scale, developed by Diener et al. (22) is a measurement tool that evaluates people's perceptions of well-being. The scale is a 7-point Likert type and consists of 8 items. The total point ranges from 8 to 56 with high scores indicate that participants view themselves positively in important areas of functionality. The scale includes items such as "My social relationships are supportive and rewarding", "I am engaged and interested in my daily activities" and "I am a good person and live a good life". The validity and reliability study of Turkish form of the scale was performed by Fidan and Usta (23) and the Cronbach alpha was found 0.83. In this study, it was found 0.90.

Data Collection

Before the data collection, participants were informed about the study, and written and verbal consent was obtained from participants. Data were collected face-to-face and it lasted average of 15-20 minutes for each participant.

Data Analysis

Nominal and ordinal variables were defined as n and %, and continues variables were defined as mean and standard deviation. Kolmogorov Smirnov test was used to determine the normality distribution of the scale scores. While Fear of Covid-19 Scale score was normally

distributed, Flourishing Scale score wasn't normally distributed. Thus, Independent Sample T-Test and One-Way ANOVA were used for comparison of Fear of Covid-19 Scale score with participant characteristics. Mann Whitney U test and Kruskal Wallis Test were used for comparison of Flourishing Scale score with participant characteristics. Spearman's rho correlation analysis was used to determine the relationship between Fear of Covid-19 Scale and Flourishing Scale scores. Multiple regression analysis was performed in order to determine the associated factors with Fear of Covid-19 and well-being scores. In the analyzes, the median value of scales was taken as the cut-off point (Table 3). Evaluation was made in two categories as "0" for values lower than the median value and "1" for higher values. Variables with $p \leq 0.15$ in univariate analyzes were included in the regression analysis (24). SPSS 26 for windows program was used for analyzes with 95% confidence interval. $p < 0.05$ was accepted as an indicator of statistical significance.

RESULTS

Participant' Characteristics

The mean ages of patients and caregivers were 56.6 ± 12.8 and 46.2 ± 14.6 respectively. Half of the patients and more than half of the caregivers (63.4%) were women. Most of the patients (75.7%) and caregivers (71.1%) were married, and lived with their family (patient: 91.9%; caregivers: 95.8%). The mean diagnosis duration of patients was 20.5 ± 29.2 months. The mean duration of caregiving was 17.2 ± 22.2 months. Characteristics of the participants are shown in Table 1.

Based on the data regarding participants Covid-19 infection experiences, it was found that 7.4% of patients and 4.9% of caregivers were diagnosed with Covid-19 positive. It was found that most of the patients (90.4%) didn't experience any disruption in the treatment caused by the pandemic, and more than half of the patients (61.1%) and caregivers (64.1%) were informed about the pandemic by healthcare professionals (Table 2).

Although not shown in the table, when participants were asked regarding their expectations from healthcare professional during the Covid-19 outbreak, patients indicated that they want to be informed about the process (16.4%) and be complied with the Covid-19 precautions (7.8%). Of the caregivers 14.6% indicated that they want health professionals to take care of them more and 7.8% of them want to comply with the Covid-19 precautions.

Almost half of the patients' stated that they were afraid of being infected during the pandemic and one-third of them stated that they needed to socialize. One-fourth of the caregivers stated that they want the restrictions to be lifted and they were afraid of their relatives getting infected.

Table 1: Characteristics of the participants

Characteristics	Patients (n=136)	Caregivers (n=142)
Age, mean ± sd (range)	56.6±12.8 (21-89)	46.2±14.6 (18-98)
	n (%)	n (%)
Gender		
Female	68 (50 %)	90 (63.4%)
Male	68 (50%)	52 (36.6%)
Marital Status		
Single	33 (24.3%)	41 (28.9%)
Married	103 (75.7%)	101 (71.1%)
Income Status		
Income lower than expenses	43 (32.1%)	39 (27.7%)
Income equal to expenses	65 (47%)	75 (52.5%)
Income higher than expenses	28 (20.9%)	28 (19.9%)
Living Place		
City center	86 (63%)	92 (64.8%)
District	47 (34.8%)	44 (31%)
Village	3 (2.2%)	5 (3.5%)
Other	-	1 (0.7%)
Who do you live with?		
Family	125 (91.9%)	136 (95.8%)
Alone	10 (7.4%)	6 (4.2%)
Friends	1 (0.7%)	-
Employment Status		
Employed	26 (19.1%)	59 (41.5%)
Unemployed	42 (30.9%)	49 (34.5%)
Retired	68 (50%)	34 (23.9%)
Educational Status		
Illiterate	1 (0.7%)	3 (2.1%)
Literate	4 (2.9%)	-
Primary education	40 (29.4%)	31 (21.8%)
High school	44 (32.4%)	35 (24.6%)
Undergraduate	43 (31.6%)	57 (40.1%)
Graduate	4 (2.9%)	16 (11.3%)
Having Health Insurance		
Yes	132 (97.1%)	-
No	4 (2.9%)	-

Duration of the disease mean ± sd (months) (range)	20.5±29.2 (1-204)	-
Duration of caregiving mean ± sd (months) (range)	-	17.2±22.2 (1-96)
Having Chronic Disease		
Yes	52 (38.5%)	37 (26.1%)
No	84 (61.5%)	105 (73.9%)
Cancer Type (for caregivers, cancer type of the person they care for)		
Breast Cancer	33 (24.3%)	27 (19%)
Lung Cancer	30 (22.1%)	25 (17.6%)
Gastrointestinal System Cancers	38 (27.9%)	40 (28.2%)
Genitourinary System Cancers	23 (16.9%)	30 (21.1%)
Others	12 (8.8%)	20 (14.1%)
Stage of Cancer		
Stage I	13 (9.5%)	-
Stage II	20 (14.7%)	-
Stage III	30 (22.1%)	-
Stage IV	43 (31.6%)	-
Missing	30 (22.1%)	-
The person who caregivers care for		
Spouse	-	46 (32.4%)
Mother or father	-	59 (41.5%)
Sibling	-	15 (10.6%)
Son/ Daughter	-	14 (9.9%)
Other	-	8 (5.6%)
Is there someone helping you in your treatment / your patients' treatment process?		
Yes	127 (93.4%)	96 (67.6%)
No	9 (6.6%)	46 (32.4%)
<i>sd: standard deviation</i>		

Relationship Between Fear of Covid-19 and Well-Being

The mean score of Fear of Covid-19 Scale of patients and caregivers were 19.6 ± 6.6, and 20.8 ± 6.9 respectively. The mean score of Flourishing Scale of patients and caregivers were 42.1 ± 9.9 and 42.1 ± 9.5 respectively (Table 3). There was no significant relationship between scales' score both for patients (rs=-0.13; p=0.12), and caregivers (rs=-0.11; p=0.18).

Comparison of Fear of Covid-19 and Well-Being Scores by Participants' Socio-Demographic Characteristics

The Flourishing Scale score of patients was significantly differ by marital status (Z=-3.1; p=0.001), income status (X²=9.32; p=0.009), employment status (X²=7.60; p=0.02)

and educational status ($X^2=11.87$; $p=0.03$). There was no significant differences in Fear of Covid-19 Scale score by patients' other characteristics ($p>0.05$). For caregivers, Fear of Covid-19 score was significantly differ by gender ($t=2.89$; $p=0.004$) and income status ($F=9.32$; $p=0.02$); Flourishing Scale score significantly differ by employment status ($X^2=7.11$; $p=0.02$) (Table 4). Also there was significant positive relationship between the Fear of Covid-19 scale mean score and age of patients ($r=0.21$; $p=0.01$).

Table 2: Covid-19 infection experiences of the participant

Characteristics	Patients (n=136) n (%)	Caregivers (n=142) n (%)
Being tested positive for Covid-19		
Yes	10 (7.4%)	7 (4.9%)
No	126 (92.6%)	135 (95.1%)
Having family member who tested positive for Covid-19		
Yes	31 (22.8%)	37 (26.2%)
No	105 (77.2%)	104 (73.8%)
Disruption in treatment during the Covid-19 pandemic (for caregivers, disruption in treatment of the person who they care for)		
Yes	13 (9.6%)	9 (6.5%)
No	123 (90.4%)	133 (93.5%)
Being informed by the healthcare professional regarding the Covid-19 pandemic		
Yes	83 (61.1%)	91 (64.1%)
No	53 (38.9%)	51 (35.9%)

Multivariate analysis of patients and caregivers' fear of Covid-19 and well-being

Results of the multiple regression analysis showed that patients who were female (OR: 0.11, $p=0.01$) and had a disruption in treatment during the pandemic (OR: 0.05, $p=0.01$) had lower well-being. Caregivers who had high income compared to low income had higher well-being (OR: 3.80, $p=0.03$) and those caring for a patient with breast cancer (OR: 0.18, $p=0.01$) compared to lung cancer had lower well-being. In addition, female caregivers had lower fear of Covid-19 compared to males (OR:0.34, $p=0.01$). Other variables included in the model weren't statistically significant ($p>0.05$) (Table 5).

DISCUSSION

Covid-19 pandemic has been one of the most important health concerns for all the world. During the Covid-19 pandemic, some patients with cancer were faced with the postponement of treatments in order not to be infected by Covid-19 (19). In our study that was done in later period of the pandemic, 9.6% of patients experienced disruption in their treatment due to the outbreak. At the early periods of the pandemic, in a study conducted by the Cancer Action Network of the American Cancer Society (20), the rate of change, delay or disruption in the treatment of cancer patients was determined as 55%. Similarly, Gultekin et al. (25) found that 32.6% of cancer patients had their treatment or follow-up changed due to the pandemic. The reasons for the low rate of disruption in treatment in our study may be that only 7.5% of the patients were infected with Covid-19 and the time period of the study was done. Another reason can be the resources of the hospitals where this study was conducted. Since the hospitals are the big university hospitals located in big cities in Türkiye, oncology departments were able to serve without any disruption in treatment.

In this study, we found that the fear of Covid-19 of both the patients and caregiver was moderate. Unlike our results, in a study conducted with patients with cancer, caregivers and health care workers in Singapore, patients and caregivers were found extremely fearful about Covid-19. Also caregivers had more fear than patients related to how Covid-19 might affect the patients' cancer treatment (10). Akbarpour et al. (26) used Fear of Covid-19 Scale, same tool as ours, in general Iranian population found that the mean score was 19.70 ± 5.08 which is very close to our findings. We found that caregivers with higher income had lower fear of Covid-19 and female caregivers had almost 3 times less fear of Covid-19 compared to males ($1/OR=2.94$, OR:0.34, $p=0.01$). Differently from our results, Karacin et al. (27) determined that female patients with cancer who didn't come to their appointments due to fear of Covid-19 had higher fear. Also, Akbarpour et al (26) found that fear of Covid-19 was higher among female participants. Participants with lower income are more afraid in our study may be associated with increasing unemployment and changing economic conditions in the current pandemic. Differences in fear levels of other studies during the pandemic may be related to different situation that participants have.

Table 3: Distribution of participants' Fear of Covid-19 Scale and Flourishing Scale scores

		n	\bar{X}	\pm sd	median	min	maks
Patients	Fear of Covid-19 Scale	136	19.6	6.6	20	7	35
	Flourishing Scale	136	42.1	9.9	46	8	56
Caregivers	Fear of Covid-19 Scale	142	20.8	6.9	21	7	35
	Flourishing Scale	142	42.1	9.5	45	8	56

X̄: mean, sd: standard deviation

Table 4: The comparison the participants' Fear of Covid-19 and Flourishing Scale mean scores by participants' characteristics

Characteristics	Cancer Patients		Caregivers	
	Fear of Covid-19 mean \pm sd	Well-Being mean \pm sd	Fear of Covid-19 mean \pm sd	Well-Being mean \pm sd
Gender				
Female	19.7 \pm 6.4	43.7 \pm 8.8	22.1 \pm 7.1	41.8 \pm 9.7
Male	19.9 \pm 7.4	40.5 \pm 10.8	18.7 \pm 6.05	42.8 \pm 9.1
p	0.89	0.07	0.004	0.51
t/Z	0.12 ^a	-1.75 ^b	2.89 ^a	-0.65 ^b
Marital Status				
Single	18.9 \pm 7.8	46.3 \pm 6.7	21.4 \pm 7.1	42.1 \pm 9.3
Married	20.1 \pm 6.6	40.7 \pm 10.4	19.3 \pm 6.01	42.4 \pm 9.9
p	0.49	0.001	0.10	0.46
t/Z	0.68 ^a	-3.1 ^b	1.63 ^a	-0.73 ^b
Income Status				
Income lower than expenses	20.9 \pm 7.5	38.8 \pm 10.1	22.9 \pm 7.3	39.2 \pm 11.5
Income equal to expenses	19.9 \pm 6.2	42.9 \pm 10.2	20.4 \pm 6.2	42.8 \pm 8.4
Income higher than expenses	17.7 \pm 7.1	45.3 \pm 7.4	18.5 \pm 7.02	44.4 \pm 8.2
p	0.16	0.009	0.02	0.10
F/X ²	1.84 ^c	9.32 ^d	3.68 ^c	4.51 ^d
Where do you live?/ Living Place				
City center	20.05 \pm 7.2	41.5 \pm 10.7	20.4 \pm 6.6	42.5 \pm 8.7
District	19.4 \pm 6.8	43.4 \pm 8.5	22.2 \pm 6.8	42.4 \pm 9.2
Village	20.3 \pm 1.1	37.3 \pm 7.5	16.8 \pm 10.8	34 \pm 21.1
Other	-	-	17	44
p	0.87	0.35	0.23	0.94
F/X ²	0.13 ^c	2.08 ^d	1.43 ^c	0.39 ^d
Who do you live with?				
Family	19.5 \pm 6.6	41.7 \pm 10.2	20.7 \pm 6.9	42.05 \pm 9.4
Alone	23.1 \pm 9.7	46.7 \pm 3.7	23.3 \pm 6.08	45.5 \pm 10.9
Friends	22	52	-	-
P	0.29	0.11	0.37	0.11
F/X ²	1.25 ^c	4.29 ^d	0.79 ^c	2.44 ^d
Employment Status				
Employed	18.07 \pm 7.7	45.03 \pm 9.7	19.2 \pm 6.6	44.1 \pm 7.8
Unemployed	20.02 \pm 6.6	43.2 \pm 9.6	21.8 \pm 7.5	39 \pm 11.3
Retired	20.3 \pm 6.8	40.3 \pm 10.05	22.3 \pm 5.9	43.5 \pm 8.2
P	0.34	0.02	0.05	0.02
F/X ²	1.06 ^c	7.60 ^d	2.93 ^c	7.11 ^d

a=Independent T test c= One way ANOVA test b=Mann Whitney U test d=Kruskal Wallis test

Table 4 continued				
Characteristics	Cancer Patients		Caregivers	
	Fear of Covid-19 mean ± sd	Well-Being mean ± sd	Fear of Covid-19 mean ± sd	Well-Being mean ± sd
Educational Status				
Illiterate	23	32	23 ± 12.2	38 ± 17.3
Literate	19.2 ± 2.3	34.2 ± 10.3	-	-
Primary education	21.5 ± 6.3	39.6 ± 10.1	23.2 ± 7.6	40.7 ± 11.4
High school	20.04 ± 6.7	43.9 ± 8.2	19.4 ± 6.7	41.4 ± 11.2
Undergraduate	18 ± 7.8	43.4 ± 11.2	20.2 ± 6.4	42.7 ± 7.3
Graduate	20.5 ± 5.5	44 ± 5.7	20.8 ± 5.7	45.6 ± 5.7
p	0.35	0.03	0.21	0.90
F/X ²	1.12 ^c	11.87 ^d	1.46 ^c	1.02 ^d
Having Health Insurance				
Yes	19.9 ± 7.02	42.3 ± 9.7	-	-
No	16.7 ± 3.8	34.5 ± 16.4	-	-
p	0.37	0.25	-	-
t/Z	0.88 ^a	-1.13 ^b	-	-
Cancer Type (for caregivers cancer type of the person they care)				
Breast Cancer	19.4 ± 6.4	43.4 ± 9.6	21.2 ± 6.9	42.2 ± 6.07
Lung Cancer	22.5 ± 7.9	38.6 ± 10.6	20.08 ± 7.05	45.4 ± 5.7
Gastrointestinal System Cancers	19.1 ± 6.3	41.5 ± 10.2	21.1 ± 6.3	42.6 ± 8.8
Genitourinary System Cancers	19.6 ± 6.7	43.4 ± 10.4	21 ± 7.3	37.7 ± 12.7
Others	16.9 ± 7.08	46.9 ± 2.8	20.5 ± 7.6	43.8 ± 10.9
p	0.13	0.11	0.97	0.12
F/X ²	1.80 ^c	7.46 ^d	0.12 ^c	7.29 ^d
Stage of Cancer				
Stage I	21.3 ± 8.08	36.3 ± 12.6	-	-
Stage II	20.5 ± 6.2	41.5 ± 11.7	-	-
Stage III	19.5 ± 7.5	40.1 ± 9.4	-	-
Stage IV	18.7 ± 7.7	44.02 ± 10.3	-	-
p	0.66	0.07	-	-
F/X ²	0.52 ^c	6.86 ^d	-	-
The person who caregivers care for				
Spouse	-	-	22.6 ± 6.4	42.5 ± 7.1
Mother or father	-	-	18.1 ± 6.7	41.3 ± 11.2
Sibling	-	-	21.9 ± 7.5	43.8 ± 8.5
Son/Daughter	-	-	21.07 ± 8.7	37.2 ± 15.3
Other	-	-	20.4 ± 6.1	43.7 ± 7.7
p	-	-	0.08	0.83
F/X ²	-	-	2.12 ^c	1.45 ^d
Chronic Disease				
Yes	20.8 ± 5.7	41.9 ± 10.2	22.05 ± 6.7	43.3 ± 9.4
No	19.2 ± 7.6	42.2 ± 9.8	20.4 ± 6.9	41.8 ± 9.5
p	0.11	0.62	0.22	0.24
t/Z	1.59 ^a	-0.48 ^b	1.21 ^a	-1.17 ^b
a=Independent T test c= One way ANOVA test b=Mann Whitney U test d=Kruskal Wallis test				

Table 4 continued				
Characteristics	Cancer Patients		Caregivers	
	Fear of Covid-19 mean ± sd	Well-Being mean ± sd	Fear of Covid-19 mean ± sd	Well-Being mean ± sd
Is there someone helping you in your treatment / your patients' treatment process?				
Yes	19.9 ± 6.9	42.3 ± 9.7	20.3 ± 7.01	42.5 ± 8.4
No	18.3 ± 7.6	38.8 ± 13.02	22.02 ± 6.6	41.4 ± 11.6
p	0.54	0.60	0.18	0.90
t/Z	0.61 ^a	-0.51 ^b	-1.32 ^a	-0.11 ^b
The status of being diagnosed as Covid-19 positive				
Yes	19.8 ± 9.7	44.9 ± 5.4	21.8 ± 8.4	39.4 ± 11.8
No	19.8 ± 6.7	41.7 ± 10.1	20.8 ± 6.8	42.2 ± 9.4
p	0.96	0.51	0.72	0.67
t/Z	0.44 ^a	-0.65 ^b	0.36 ^a	-0.41 ^b
The status of a family member being diagnosed as Covid-19 positive				
Yes	18.3 ± 5.7	41.1 ± 11.5	22.08 ± 6.08	41.2 ± 9.8
No	20.2 ± 7.2	42.4 ± 9.5	20.5 ± 7.1	42.4 ± 9.4
p	0.20	0.50	0.24	0.57
t/Z	-1.27 ^a	-0.66 ^b	1.17 ^a	-0.56 ^b
Disruption in treatment during the Covid-19 pandemic period (for caregivers, disruption in treatment of the person they care for)				
Yes	19.8 ± 7.3	47.6 ± 4.02	17.8 ± 8.7	35.7 ± 11.6
No	19.8 ± 6.9	41.5 ± 10.2	21.1 ± 6.7	42.5 ± 9.3
p	0.91	0.03	0.17	0.05
t/Z	0.10 ^a	-2.14 ^b	-1.37 ^a	-1.92 ^b
The status of being informed by the healthcare professional regarding the Covid-19 pandemic process				
Yes	19.7 ± 7.03	43.6 ± 8.06	21.1 ± 6.6	43.05 ± 9.4
No	19.9 ± 6.9	39.3 ± 12.03	20.4 ± 7.2	40.3 ± 9.6
p	0.67	0.11	0.56	0.05
t/Z	-0.42 ^a	-1.57 ^b	0.57 ^a	-1.94 ^b
a=Independent T test c= One way ANOVA test b=Mann Whitney U test d=Kruskal Wallis test				

Table 5: Result of multiple regression models of patients and caregivers' fear of Covid-19 and well-being												
Characteristics	Cancer Patients						Caregivers					
	Fear of Covid-19			Well-Being			Fear of Covid-19			Well-Being		
	OR	CI 95% Lower-Upper	p	OR	CI 95% Lower-Upper	p	OR	CI 95% Lower-Upper	p	OR	CI 95% Lower-Upper	p
Gender												
Male ^a	-	-	-	0.11	0.23-0.60	0.01	0.34	0.14-0.83	0.01	-	-	-
Female	-	-	-	-	-	-	-	-	-	-	-	-
Marital Status	-	-	-	-	-	-	0.16	-	-	0.05	-	-
Income Status	-	-	-	-	-	-	0.28	-	-	0.26	-	-
Income lower than expenses ^a	-	-	-	-	-	-	-	-	-	-	-	-
Income equal to expenses	-	-	-	-	-	-	-	-	-	2.27	0.88-5.84	0.08
Income higher than expenses	-	-	-	-	-	-	-	-	-	3.80	1.06-13.53	0.03
Employment Status	-	-	-	-	-	-	0.89	-	-	0.66	-	-
Educational Status	-	-	-	-	-	-	0.13	-	-	-	-	-
Who do you live with?	-	-	-	-	-	-	0.37	-	-	-	-	0.17
Stage of Cancer	-	-	-	-	-	-	0.39	-	-	-	-	-
Cancer Type	-	-	-	-	-	-	0.07	-	-	-	-	-
Lung Cancer ^a	-	-	-	-	-	-	-	-	-	-	-	-
Breast Cancer	-	-	-	-	-	-	-	-	-	0.18	0.04-0.74	0.01
Gastrointestinal System Cancers	-	-	-	-	-	-	-	-	-	0.51	0.14-1.88	0.31
Genitourinary System Cancers	-	-	-	-	-	-	-	-	-	0.27	0.07-1.05	0.06
Others	-	-	-	-	-	-	-	-	-	0.52	0.12-2.25	0.38
Disruption in treatment during the Covid-19 pandemic												
Yes ^a	-	-	-	0.05	0.005-0.60	0.01	-	-	-	-	-	0.09
No	-	-	-	-	-	-	-	-	-	-	-	-
Being informed by the healthcare professional regarding the Covid-19 pandemic	-	-	-	-	-	-	0.11	-	-	-	-	0.18
The person who caregivers care for	-	-	-	-	-	-	-	-	-	0.91	-	-
Chronic Disease	-	-	-	0.55	-	-	-	-	-	-	-	-
Age	-	-	-	0.42	-	-	-	-	-	-	-	-
Fear of Covid-19	-	-	-	-	-	-	0.80	-	-	-	-	-
Well-Being	-	-	-	0.43	-	-	-	-	-	-	-	-

OR: Odds Ratio, a= Reference value
 Note: OR and CI 95% Lower-Upper values were given only for the variables were significant in the model.

Patients and caregivers' well-being was found high in this study. In a nationwide survey conducted in China, it was found that the onset of pandemic caused to 74% decline in emotional well-being (28). In another study, different scale used than ours, cancer patients' well-being were in low range (29). In a study conducted among caregivers, 15% of them stated that they noticed a change in their psychological well-being (30). On the other hand, Ripamonti et al. (31) determined that the psychological

well-being of patients with cancer is higher than in the general population during the pandemic. The difference between studies' results shows different responses and adaptation to the circumstance by various populations. The reason for the high well-being of patients with cancer, as in our study, maybe because they are used to coping with uncertainty and anxiety with the awareness of having a chronic and fatal disease.

Zomerdijk et al. (32) showed that one in four hematological cancer patients indicated they had lost income as a result of the pandemic and in terms of financial well-being 29% of them stated that their financial worries had been worse compared to before. In this study, it was found that those having a higher income in caregivers had 3.8 times increased well-being compared to those with lower income. Supporting the results of our study, there are couple of studies in which decreased income is associated with low well-being (28,33). Lehto et al. (34) reported that the psychological well-being of patients with prostate cancer who lived with partner and had high level of education was better. Similar to the higher well-being of single patients with cancer in our study, another study found that married individuals experienced larger decline in emotional well-being than unmarried during the pandemic (28). It can be considered as an expected situation for married individuals to have lower well-being than singles, as they may have more responsibilities due to marriage.

The results of this study shows that there is no significant relationship between patients' and caregivers' fear of Covid-19 and well-being. Differently from our results, in a study comparing patients with cancer and general population in Italy, it was found that mental well-being score was associated with lower fear of Covid-19 (31). Bell et al. (35) showed also that increased Covid-19 stressors were associated with reduced mental well-being. In another study conducted among medically vulnerable patients in Singapore, it was found that Covid-19 generally had moderately low impact on well-being of patients (36). All of studies mentioned above was completed before our study. The difference between our study and other studies' results may be because of dissimilar responses of populations to the pandemic or different periods in which the studies were conducted.

Limitations

This study has some limitations. Majority of our participants were financially secure, high educated and had supportive relatives. Also, their cancer treatment were generally not delayed due to the pandemic. So the result of the study cannot be generalize. On the other hand, the scales used to investigate the fears of Covid-19 and well-being of the participants may also be restrictive in terms of comprehensive evaluation since they are unidimensional. Therefore, further research, using comprehensive scales or a qualitative desing including participants with different socioeconomic, is recommended.

Clinical implications

To our findings, there were patients with cancer and caregivers who stated that they wanted to be informed about the process of ongoing Covid-19 pandemic and be taken care of them more by health professionals. Therefore, psychosocial support given to patients and their caregivers shouldn't be considered separately from medical treatment. In particular, patients and caregivers who may be more affected by negative consequences of the pandemic (such as low income, unemployment) deserves attention and support of healthcare professionals. Besides, maintaining the well-being of patients with cancer and caregivers, who have chronic course and long treatment process, is very considerable for the effectiveness of treatment. The results of the study can help healthcare professionals better understand the fears and needs of cancer patients and caregivers and plan their care accordingly, especially during this health crisis.

CONCLUSION

In this study, we found that the fear of Covid-19 of the participants were moderate, their well-being levels were high, and there was no significant relationship between the two conditions. While age was a significant variable for fear of Covid-19 in patients with cancer, it was determined that married, low-income, retired and low-educational patients had lower well-being. Evaluating the caregivers, it was found that women and those with low income levels had a higher fear of Covid-19 and those who did not work had a lower well-being.

Consequently, during the Covid-19 pandemic, the importance of psychosocial support to patients with cancer and caregivers has increased in order to increase their well-being and to cope with their fears about the pandemic. We recommend further studies focusing on the long-term effect of the pandemic on patients with cancer and caregivers. On the other hand, action plans should be prepared by healthcare professionals for similar situations in the future, covering the needs of patients and caregivers, and preventing problems such as delays in treatment and care. Importance should be required on making these plans to include people of various socioeconomic and educational levels.

Declarations

Conflict of Interest

The authors declare no conflicts of interest, financial or otherwise.

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Availability of Data

Available upon request.

Ethics approval

This study was approved by Ethics Committee of the Koc University, Istanbul, Türkiye (Approval No. 2020. 450. IRB 3.177).

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