Analysis of Distress in Patients with Gynecological Cancers During the COVID-19 Pandemic: A Telephone Survey

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ABSTRACT Objective: To investigate distress levels in patients with gynaecological cancers during the coronavirus disease-2019 (COVID-19) pandemic and identify factors associated with distress. **Material and Methods:** A total of 193 patients who underwent cytoreductive surgery for gynaecological cancer were included in our research. The patients were contacted by phone and provided detailed information about our study and the questionnaire that was to be applied. We performed distress screening using The National Comprehensive Cancer Network Distress Thermometer and Problem List (PL), developed for cancer patients. **Results:** In the study group, 51% of patients were categorized in the high-stress group. As practical problems, childcare (p<0.001), insurance/financial (p<0.033), work/school (p<0.001), treatment decisions (p<0.001), have significant differences between 2 groups in the present study. As family problems dealing with children (p<0.001), family health issues (p<0.014) have significant differences between the low-stress group and the high-stress group. All the emotional parameters evaluated by PL questionnaire have significant difference between the groups. The emotional significance levels of the parameters are as follows: depression (p<0.001), fears (p<0.001), nervousness (p<0.002), sadness (p<0.001), worry (p<0.012), loss of interest (p<0.001). **Conclusion:** Our results send a message to the gynaecological cancer healthcare world about what conditions may plague the gynaecological cancer patient in COVID-19 pandemic. Identifying problem areas for patients in our study constitutes the first step in the intervention.

Keywords: COVID-19 pandemic; distress; gynaecological cancer; sources of distress

Symptoms of depression, anxiety, psychological discomfort, post-traumatic stress disorder and stress were reported to be quite prevalent in the general population during the coronavirus disease-2019 (COVID-19) pandemic.[1] Female gender, being younger ≤40 years, chronic/psychiatric disorders, unemployment, student status, and frequent exposure to COVID-19-related social media/news are among the risk factors related to distress criteria in the general population during the COVID-19 outbreak.[1] Due to the frequent interaction with the health service, weakened immune status based on the cancer or its treatment, supportive medicines, and older age and comorbidities, cancer patients are one of the most vulnerable populations during the COVID-19 pandemic.[2]

The studies on gynaecological cancer patients support distress effects from COVID-19. Because of the immunosuppression caused by chemotherapy, 73.2 percent of patients with gynaecological cancer believe that they are at increased risk of COVD-19 infection, although only 17.5 percent of patients are more dreaded of COVID-19 than their pre-existing cancer diagnosis. The majority of gynaecological cancer patients (71%) are afraid that if their treatment or oncological follow-up is delayed or cancelled, their disease may advance, and nearly half (53.1%) express fears of contracting COVID-19 from hospitals or clinics during oncological treatment or follow-up.[3]

Despite the fact that the impact of the COVID-19 infection on gynaecological cancer patients receiving active therapy or being followed up has been

recorded, the distress level and the factors associated with distress of gynaecological cancer patient whose active treatment has finished, and were attending regular follow-up have not been documented. It is clear that more effective and targeted psychological support can be provided to gynaecological malignancy patients by determining the levels of distress and factors that are influential on distress levels. We hypothesized that high distress scores in gynaecological cancer patients whose active treatment have finished and were attending regular follow-up would be compared to the normal population. In our study, we aimed to evaluate distress levels and associated factors in gynaecological cancer patients.

MATERIAL AND METHODS

Our study included 193 patients followed by the Department of Obstetrics and Gynaecology at Erciyes University (EU) Faculty of Medicine who underwent cytoreductive surgery for gynaecological cancers between 2015 and 2020, and were attending regular follow-up after any and all additional treatments had been completed. The EU Ethics Committee approved the conduct of our study as a non-interventional clinical research (date: Jun 10, 2020; no: 2020/290). Written permission was obtained from the General Directorate of Health Services, Republic of Türkiye Ministry of Health (date: May 15, 2020; no: 2020-05-13T09_23_41). The study was conducted in accordance with the principles of the Declaration of Helsinki.

Using the Information Processing Centre database of EU Medical Faculty Hospitals, we identified 265 patients who had undergone cytoreductive surgery for gynaecological cancer treatment between 2015 and 2020. Patients diagnosed with psychiatric disorders such as depression or anxiety disorders, those who were using antidepressants and anxiolytic drugs, and those who received psychotherapy were not included in the study.

The patients were contacted by phone and provided detailed information about our study and the questionnaire that was to be applied. Verbal consent was obtained from all participants over the phone. Written consent forms were sent by mail to their addresses. Patients who gave written consent to participate in the study and sent the written consent forms back to us were

included in the study. A total of 207 patients responded, of which 193 had completed the data forms (93.2% completion rate). These 193 patients who agreed to participate in our research and met inclusion criteria were included in the final analyses.

Patients' treatment status, age (year), height, comorbidities, smoking, marital status, education levels and phone number were obtained by scanning all electronic and regular patient files. Participants who agreed to participate in our study were asked about their latest body weight (kg), whether they had been diagnosed with any diseases in another centre, whether they had received psychiatric treatment, and were asked whether they had any health-related problems in the last 7 (yes/no) days. In addition, for evaluating distress level cause by COVID-19, the Comprehensive Cancer Network (CCN) Distress Thermometer (DT) and Problem List (PL) questionnaire were applied to the patients via phone (Figure 1). The data obtained from the participants were recorded on the patient information forms.

CCN DISTRESS THERMOMETER (DT) AND PL

In the present study, we used the internationally valid and nationally integrated National Comprehensive Cancer Network (NCCN) DT and PL questionnaire to determine the distress level of participants and the factors associated with distress (Figure 1). In the PL section of this survey, developed for distress screening in cancer patients, cancer patients are asked 39 questions in 5 types: practical, familial, emotional, physical problems, and spiritual/religious concerns that could be a potential cause for distress among cancer patients.[4] The DT is a one-question visual analogue scale designed to assess psychological distress in cancer patients. The distress is rated between 0-10 with the thermometer analogy. A score of 0 denotes that the person is under no stress ('no distress'), while 10 points indicate that the individual has the highest distress.[5]

Four points or higher scores are advised to be assessed in terms of whether they should be referred to psychosocial services.[4] In the validity and reliability study of the Turkish version of DT, conducted by Ozalp et al. in 2006, the scale's sensitivity was found to be 0.73, its specificity was 0.49, and the cut-off point was 4, for the detection of severe distress.[6] Our study defined the cut-off score for DT to be 4 and
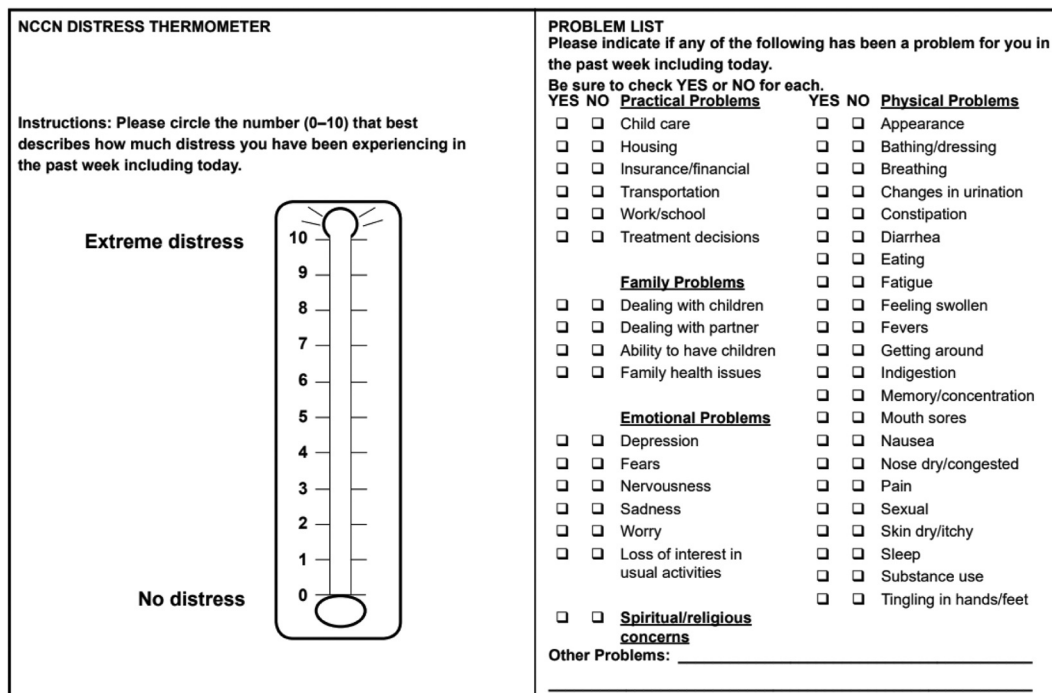
FIGURE 1: Image from National Comprehensive Cancer Network distress thermometer version 2.2018 (4).

analysed the patients by dividing them into 2 groups: DT score <4 (low stress group) and ≥4 (high stress group).

STATISTICAL ANALYSIS

All analyses were performed on the SPSS v21 (SPSS Inc., Chicago, IL) software. Continuous variables were expressed as mean and standard deviation, categorical data in frequency and percentage. Categorical data were compared by using chi-square tests. The independent samples t-test and ANOVA test were used in the comparison of continuous variables. Pearson correlation analysis was used to the directional relationships between continuous variables. p<0.05 was defined as the threshold of significance.

RESULTS

No significant difference of distress level was found between education, marital status, smoking and presence of comorbidity data of the patients participating

TABLE 1: Demographic and clinical characteristics of patients.				
		DT score		
		Mean	**Standard deviation**	**p values**
Marital status	Single	4.00	1.04	0.695
	Married	3.83	1.62	
Education	№	3.61	1.14	0.061
	Primary	3.22	1.33	
	Middle	3.92	1.50	
	High school	4.30	1.64	
	University	5.15	1.58	
Comorbidity	№	4.04	1.62	0.061
	Yes	3.61	1.52	
Smoking	№	3,78	1,55	0,176
	Yes	4,24	1,79	

DT: Distress Thermometer.

(n=193) in the study (p>0.05) (Table 1). There was a significant correlation between age and DT score (r=-0.278, p<0.001). Distress levels were detected to decrease with increasing age of the patients in the present study.

Our study defined the cut-off score for DT to be 4 and analysed the patients by dividing them into 2 groups: DT score <4 (low stress group) and ≥4 (high stress group). In the study group, 51% of patients were categorized in the high-stress group (Table 2).

As practical problems, childcare (p<0.001), insurance/financial (p<0.033), work/school (p<0.001), treatment decisions (p<0.001) showed significant dif-

TABLE 2: Differences in problems between the stress groups.			
	DT score categories		
	Lower stress (n=94)	Higher stress(n=99)	p value
Practical problems			
Childcare	17 (18.1%)	41 (41.4%)	<0.001
Housing	57 (60.6%)	66 (66.7%)	0.384
Insurance/financial	21 (22.3%)	36 (36.4%)	<0.033
Transportation	13 (13.8%)	20 (20.2%)	0.240
Work/school	4 (4.3%)	22 (22.2%)	<0.001
Treatment decisions	4 (4.3%)	31 (31.3%)	<0.001
Family problems			
Dealing with children	17 (18.1%)	40 (40.4%)	<0.001
Dealing with partner	46 (48.9%)	54 (54.5%)	0.436
Family health issues	20 (21.3%)	37 (37.4%)	0.014
Emotional problems			
Depression	4 (4.3%)	20 (20.2%)	<0.001
Fears	34 (36.2%)	59 (59.6%)	<0.001
Nervousness	27 (28.7%)	50 (50.5%)	0.002
Sadness	13 (13.8%)	53 (53.5%)	<0.001
Worry	42 (44.7%)	62 (62.6%)	0.012
Loss of interest	1 (1.1%)	16 (16.2%)	<0.001
Spiritual/religious concern	8 (8.5%)	10 (10.1%)	0.704
Physical problems			
Appearance	0 (0%)	12 (12.1%)	<0.001
Breathing	1 (1.1%)	4 (4%)	0.193
Changes in urination	11 (11.7%)	4 (4%)	0.047
Constipation	24 (25.8%)	19 (19.2%)	0.272
Diarrhea	3 (3.2%)	6 (6.1%)	0.345
Eating	12 (12.8%)	14 (14.1%)	0.780
Fatigue	20 (21.3%)	48 (48.5%)	<0.001
Feeling swollen	22 (23.4%)	34 (34.3%)	0.094
Fevers	0 (0%)	3 (3%)	0.089
Getting around	19 (20.2%)	34 (34.3%)	0.028
Indigestion	6 (6.4%)	13 (13.1%)	0.116
Memory /concentration	8 (8.5%)	6 (6.1%)	0.512
Mouth sores	2 (2.1%)	3 (3%)	0.693
Nausea	4 (4.3%)	5 (5.1%)	0.793
Pain	1 (1.1%)	21 (21.2%)	<0.001
Sexual	1 (1.1%)	29 (29.3%)	<0.001
Skin dry /itchy	4 (4.3%)	5 (5.1%)	0.793
Sleep	18 (19.1%)	37 (37.4%)	0.005
Substance use	1 (1.1%)	1 (1%)	0.971
Tingling in hands/feet	18 (19.1%)	16 (16.2%)	0.586

DT: Distress Thermometer.

ferences between 2 groups in the present study (Table 2).

As family problems, dealing with children (p<0.001), family health issues (p<0.014) showed significant differences between the low-stress group and the high-stress group (Table 2).

All the emotional parameters evaluated by PL questionnaire showed significant differences between the groups. The significance levels of the emotional parameters are as follows: depression (p<0.001), fear (p<0.001), nervousness (p<0.002), sadness (p<0.001), worry (p<0.012), loss of interest (p<0.001) (Table 2). As spiritual/religious concern, no significant differences were found between the groups (p>0.704) (Table 2).

With regard to physical problems, the high-stress group had signifi-cantly higher scores for appearance (p<0.001), fatigue (p<0.001), getting around (p<0.028), pain (p<0.001), sexual (p<0.001), sleep (p<0.005) as compared to the low stress group (Table 2).

DISCUSSION

Distress in cancer is defined according to Clinical Practice Guidelines in Oncology as "unpleasant multi-factor experience of psychological (i.e., cognitive, behavioral, or emotional) social, spiritual, and/or physical nature that can effectively inhibit the ability to cope with the physical symptoms and treatment of cancer".[4] In the present study, we have evaluated gynecologic oncology patients' distress level and the situations cause to increase distress level in COVID-19 pandemic.

The experience of cancer is associated with depression, anxiety and negative health-related consequences.[7] It is known that the strain of cancer patients increased with the COVID-19 pandemic, 51% of the gynecological cancer patients participating in our study had high distress levels. The data provided by Ozamiz-Etxebarria et al. have indicated significant differences in depression and anxiety among elderly people during the COVID-19 pandemic.[8] In line with this data, we found a significant relationship between age and DT score (r=-0.278, p<0.001). Conversely, according to the study conducted by Nwachukwu et al., anxiety levels were greatest among individuals under the age of 25 and least among those over the age of

60.[9] These considerable variations may be a direct result of national differences in the response to COVID-19, access to treatments or vaccines, and social perception of the disease in different demographics.

Unlike the other questionnaire sections, all of the emotional criteria in the NCCN DT and PL questionnaire are associated with an increase in distress values. Anxiety and depression levels have been assessed in population-based studies taking a deeper look for links between stress related to COVID-19 and its symptoms. Depression and anxiety rates in the general population varied from 9.3% (10) to 31.0%.[10] Throughout the COVID-19 outbreak these percentages ranged from %8.9 (10) to %36.0 among oncology patients.[11] During the pandemic, many gynecologic cancer surgeries had to be delayed or canceled in several countries due to infrastructural disruptions associated with the allocation of workforce in healthcare centers. This may be an important factor increasing patients' worries related to their treatment and emotional problems. Also, it is not unexpected that patients in our high-stress group had higher levels of sexual problems and depression, given the established ties between COVID-19-related measures and increased loneliness levels in the general population.[12] In addition, in our study, negative effects of physical symptoms of patients related to appearance, fatigue, getting around, pain, sexual, sleep on distress level were determined. Similarly, the effect of physical symptoms on emotional symptoms has been reported in other studies.[13] Physical problems may be a predictor of emotional problems detected in patients.

In addition, despite the fact that the number of reported cases and mortality from the COVID19 pandemic were among the lowest in Europe at the time, Türkiye and Eastern Europe had some of the greatest levels of anxiety and depression rate.[3] It has been suggested that the dread of COVID-19 itself is not the source of distress, but rather the problems posed by the pandemic on the healthcare system and society, with some nations coping and adapting better than others, owing to their resources and procedures for reorganizing treatment.

In our study, practical problems such as childcare, insurance/financial, work/school, treatment decisions were evaluated as effective factors on distress but

hoousing and transportation were not found to be effective on distress severity. In addition, spiritual/religious concern problems were not effective on the distress level of the patients. Considering the conditions of the region where we conducted our study, it can be thought that practical problems, family problems and spiritual/religious concern problems are influenced by sociocultural and socio-demographic characteristics.

In terms of family problems, children and family health affected the distress level in the study. Problems related to the partner were not found to be effective at the distress level. It was considered that extra psychosocial parameters evaluated financial problems and their social life were needed to explain the effects of the patients' family problems on the distress level.

While this study contributes to our understanding of the vital effects of COVID-19 on cancer-related distress among patients with gynecological cancers, similar to prior publications, it does have some notable limitations.[14] Given that our patients were women with gynecological cancer from Kayseri, Türkiye, the generalizability of data to other cohorts is very limited. However, similarly designed studies have shown compatible results; for instance, in patients with breast cancer who had significantly higher levels of fear and depression.[15] Nonetheless, future studies are needed to confirm that our findings may be applied to males or individuals with various cancer diagnoses, and such studies need to be expanded to include other communities to help prepare and execute practical approaches to reduce stress and symptoms, which appear to be particularly effective on treatment decisions in our study group. As the COVID-19 pandemic progresses, longitudinal studies are required to determine the changes in stress and symptom burden over time.

CONCLUSION

The current research posed serious questions about the high prevalence of mental health issues among gynecological cancer patients during the COVID-19 pandemic. After a cancer diagnosis, it is crucial to introduce mental health screening for all patients. The results show that mental healthcare services should be prioritized for cancer patients during the pandemic to help them cope and avoid mental health deterioration. Our results give a strong message to the healthcare world that patients are more concerned with their particular health conditions even in crises, and it is our duty as healthcare practitioners to address these problems in a satisfactory manner despite all obstacles. The researchers and the oncology community have been calling for accelerated introduction of affordable interventions to help cancer patients retain mental stability during times of crisis.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Adem Yavuz, Mehmet Dolanbay;* ***Design:*** *Adem Yavuz, Emine Füsun Akyüz Çim, Mehmet Dolanbay, Ayşe Dişli Güler, Cevat Fırat Cündübey;* ***Control/Supervision:*** *Adem Yavuz, Emine Füsun Akyüz Çim, Mehmet Dolanbay;* ***Data Collection and/or Processing:*** *Adem Yavuz, Ayşe Dişli Güler, Cevat Fırat Cündübey, Mehmet Dolanbay;* ***Analysis and/or Interpretation:*** *Mehmet Dolanbay, Adem Yavuz, Emine Füsun Akyüz Çim;* ***Literature Review:*** *dem Yavuz, Emine Füsun Akyüz Çim, Mehmet Dolanbay;* ***Writing the Article:*** *dem Yavuz, Emine Füsun Akyüz Çim, Mehmet Dolanbay;* ***Critical Review:*** *dem Yavuz, Emine Füsun Akyüz Çim;* ***References and Fundings:*** *Adem Yavuz, Ayşe Dişli Güler, Cevat Fırat Cündübey.*

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