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Distress symptoms, anxiety, depression level, and self-care ability of oncology inpatients in a Region of Turkey

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Summary. *Background and aim of the work:* Although cancer diagnosis and treatment induce distress, anxiety, and depression, these symptoms are not efficiently diagnosed by healthcare professionals until expressed by patients. In this research, it was aimed to detect the factors affecting distress symptoms, anxiety, depression, and self-care ability among oncology inpatients. *Methods:* This descriptive cross-sectional study was conducted in the oncology department of a research hospital located in the Central Black Sea Region in the north of Turkey. A total of 356 patients participated. Data were collected via a 29-item questionnaire and the Hospital Anxiety and Depression Scale, Symptom Distress Scale, and Self-care Ability Scale. *Results:* It was found that 61.8% of patients were at risk of anxiety and 76.4% were at risk of depression. The total mean score for the Symptom Distress Scale was 38.91±15.02 and that for the Self-care Ability Scale was 79.5±22.6. The highest scores on the Symptom Distress Scale were observed for severity of pain (3.43±1.34), fatigue (3.38±1.29), and frequency of pain (3.32±1.33). *Conclusions:* This study showed that distress prevalence among oncology patients is 78.6%; patients perceived their self-care ability to be at a medium level. Moreover, 84.3% of patients resorted to complementary treatments (herbal treatment, regulating diet, praying) in order to alleviate or mitigate the symptoms they experienced.

Key words: anxiety, depression, distress, oncology, patient, self-care

A life-threatening diagnosis like cancer induces psychological distress for the individual (1, 2). According to the National Comprehensive Cancer Network Clinical Practical Guidelines in Oncology (3), "Distress is a multifactorial unpleasant emotional experience of a psychological, social, and/or spiritual nature that may interfere with the ability to cope effectively with cancer, its physical symptoms and its treatment." In the relevant literature, it has been reported that distress adversely affects psychological healing; distressed patients have been found to demand more medical services, have problems in decision making and feel less satisfied (contented) with the medical service they have received. It has also been underlined in these studies that cancer-induced distress often goes unnoticed among healthcare professionals, who fail to spare adequate time to ask about the level of distress among patients. When distress goes unnoticed, the daily functions of the patient are adversely affected and their life quality decreases (4).

Although cancer diagnosis and treatment induce certain distress symptoms in the patient, extensive diagnosis of the symptoms is not a part of routine cancer care. Healthcare professionals generally wait until patients express these symptoms, and patients are mostly unwilling to report their problem until the symptoms heighten in frequency (5). The Canadian Strategy for Cancer Control categorized emotional distress, in addition to the accompanying vital signs, as the key indicator of a patient's health and general well-being and assigned it as the sixth vi-

tal finding (6). Zabora *et al.* (2001) reported that one out of every five oncology patients is affected by distress; the prevalence distress is 35.1% and the highest symptom score induced by anxiety and depression was observed among pancreatic cancer patients (7).

The prognosis and treatment of cancer may lead patients to experience physical symptoms such as fatigue, anorexia, weight loss, insomnia, and intense emotions such as anxiety and depression (1, 8, 9). Cancer is a threat, and anxiety is the most frequent response to arise in the face of any threat. Anxiety may exist in all clinical populations, but only under certain circumstances does it turn into a disease (10). Next to anxiety, depression is also quite widespread among cancer patients and its consequences are devastating (11). Social isolation, fatigue, anorexia, weight loss, sleep disorders, cognitive disorders, libido loss, and psychomotor retardation are the most widespread symptoms of major depression. Nonetheless, these symptoms are usually misunderstood as the routine consequences of the cancer disease and treatment process; hence, they may go unnoticed (9, 11).

Brintzenhofe-Szoc *et al.* (2009) conducted a study to detect anxiety and depression symptoms among wider cancer groups. They reported that 12.4% of patients showed signs of mixed anxiety and depression, 18.3% showed signs of general depression, and 24.0% showed signs of general anxiety (12). In Karabulutlu *et al.* (2010) study executed to identify anxiety, depression, and coping levels among Turkish cancer patients, it was reported that 61.5% of patients had anxiety and 81.3% had depression. Compared to men, both depression and anxiety levels were higher among women (13). In the research conducted by Aydoğan *et al.* (2012) when compared with the control group, it was seen that depression and anxiety scores were high among oncology patients (14). Another relevant study reported that 23.6% of patients were depressed and when compared with non-depressed patients, the scores on the life-quality symptom scale were higher among depressed patients. Meanwhile, patients with low anxiety scores had higher life quality scores (15).

To achieve the goal of improving the life quality of oncology patients, there is a need for further studies that consider cross-country, cross-regional, and cross-cultural divergences in addition to relevant findings and data collected from such studies. As attested by the authors of this study, this is pioneering research in the Central Black Sea Region in the north of Turkey. It is considered that the findings obtained from this research will contribute to developing the appropriate strategies for Cancer National Action Plans implemented with the aim of alleviating distress symptoms among oncology patients, preventing anxiety and depression, and maximizing patients' self-care abilities and improving their quality of life. Moreover, having awareness on the prevalent symptoms among cancer patients, their anxiety and depression levels, and their self-care strategies will help healthcare professionals to provide optimum care and treatment options to their patients.

Objectives

The present study was conducted to detect the factors affecting the distress symptoms, anxiety and depression levels, and self-care ability among oncology patients. To accomplish this, the following research questions were formulated:

- What are the most frequent distress symptoms among patients?
- What are the anxiety and depression levels of patients?
- How can the self-care ability of patients be characterized?
- Do the sociodemographic and clinical characteristics of patients affect their distress symptoms, anxiety and depression levels, and self-care ability?

Methods

Study design and sampling method

This descriptive study was conducted among 356 patients hospitalized between 1 January and 30 June 2013 in the oncology department of a research hospital located in the Central Black Sea Region in

the north of Turkey. The study participants were selected from patients aged 18 years and above who had been diagnosed with cancer. The included participants were literate, volunteered to take part in the research, were physically and mentally able, and could read and sign the informed consent form for the research. In this research, an initial attempt was made to access the entire population, but ultimately non-volunteering patients, those who had not properly completed the questionnaire form, and those with a cognitive disorder (n=38) were excluded from the research; thus, the final sample comprised 356 oncology patients. The rate of questionnaire completion was 90.3%.

Data collection

In this research, data were collected via a 29-item questionnaire form developed by researchers in line with relevant literature (13-17) to determine patients' sociodemographic characteristics. The other tools were the Hospital Anxiety and Depression Scale (HAD), Symptom Distress Scale, and Self-care Ability Scale. Clinical information about the patients (diagnosis, stage of the disease, applied treatments, date of diagnosis) was retrieved from patient files.

The questionnaire form was pre-tested as a pilot among a group of 10 patients; patients participating in the pilot study were not included in the sample. Data were collected by the researchers. Upon informing participant patients about the aim of the research, they were reminded that the decision to participate in this research was entirely voluntary. The patients were also informed that questionnaire form would be anonymous (no names written) and data collected within the scope of this research would be merely utilized for the objectives of this research. The research instruments took approximately 20-25 minutes to administer.

Data collection tools
Symptom Distress Scale

The Symptom Distress Scale was developed by Ruth McCorkle and Katherine Young in 1978. The scale consists of 13 items, namely frequency of nausea, severity of nausea, appetite, insomnia, frequency of pain, severity of pain, fatigue, bowel pattern disorder, breathing, cough, outlook, concentration, and appearance. The scale's score interval was 13-65. A high score on the scale represents a high level of distress symptoms (18, 19). In the present study, Cronbach's alpha reliability coefficient for the Symptom Distress Scale was measured as 0.96.

Hospital Anxiety and Depression Scale

The HAD Scale was developed by Zigmond and Snaith (1983) to identify the risk of anxiety and depression, level of risk, and shift in the severity of risk among patients (20). In Turkey, a validity and reliability test of this scale was conducted by Aydemir *et al.* (1997). The cutoff score of the HAD Scale's Turkish form was measured as 10 for the anxiety scale and 7 for the depression scale. Accordingly, those receiving more than 10 points from the anxiety subscale are considered to be at risk of anxiety, and those receiving more than 8 points on the depression subscale are considered to be at risk of depression (21). In the present study, the HAD Scale Cronbach's alpha reliability coefficient was computed as 0.71.

Self-care Ability Scale

The Self-care Ability Scale is utilized to measure a person's capacity to render self-care or measure a person's self-care ability. Developed by Kearney and Fleicher (1979) and consisting of 43 items (22), this scale was adapted for Turkish society by Nahçıvan (1994). In this scale, which was reduced to 35 items when adapted into Turkish. The maximum score is 140. A high score corresponds to high self-care ability (23,24). In the present study, the Cronbach's alpha reliability coefficient for the Self-care Ability Scale was measured as 0.89.

Ethical considerations

This study was conducted in accordance with the principles of the Helsinki Declaration. Prior to

the commencement of the study, ethical approval was obtained from the ethics committee of the relevant institution where the research was performed (29.11.2012, number B.10.1.THK.4.55-12479). To begin data collection, written approval was received from the hospital administration and patients included within the scope of the research gave their written consent.

Data analysis

Statistical analysis of the data pertinent to the analyzed patients was conducted using SPSS 15.0. Percentages, one-way ANOVAs, student t-tests, and Spearman's Rho correlation test were used to analyze the data.

Results

A total of 356 oncology patients took part in the study. As shown in Table 1, in this research, 42.7% of patients were women, 57.3% were men, 76.4% were married, 36.0% were literate, 95.5% of patients had social security, and 49.5% had incomes lower than their expenditures. Other details of the patients' demographic characteristics are listed in Table 1.

In this research, it was found that 27.0% of patients had been diagnosed with gastrointestinal cancer, 24.8% with respiratory system cancer, 13.5% with urinary system cancer, and 20.2% with breast cancer. Moreover, 33.7% were in the second stage of the disease, 47.2% were receiving chemotherapy and radiotherapy, 74.2% of patients were contented with the medical treatment they had received, 40.7% resorted to herbal treatment methods, 33.1% regulated their diet, and 38.8% prayed to alleviate the negative symptoms they experienced due to cancer. Other details of the patients' clininc characteristics are listed in Table 2.

The means of scores received by the patients on the HAD Scale are given in Table 3. The total mean score of the patients on Hospital Anxiety Depression – Anxiety (HAD-A) was 11.7±3.9, while for Hospital Anxiety Depression – Depression

Table 1. Socio-demographic characteristics of patients (N=356).

Characteristics	M	(SD)
Mean age	54.6	(16.7)
Mean number of children	3.11	(2.20)
	n	(%)
Gender		
Female	152	(42.7)
Male	204	(57.3)
Marital status		
Married	272	(76.4)
Single	24	(6.7)
Widow/divorced	60	(16.9)
Educational level		
Literate	128	(36.0)
Elementary	108	(30.3)
Intermediate school	24	(6.7)
High school	64	(18.0)
University	32	(9.0)
Social insurance		
Present	340	(95.5)
Absent	16	(4.5)
Employment status		
Working	100	(28.1)
Nonworking	256	(71.9)
Job		
Civil servant	40	(11.2)
Employee	12	(3.4)
Retired	68	(19.1)
Self-employment	52	(14.6)
Farmer	52	(14.6)
Housewife	112	(31.5)
Students	20	(5.6)
Income status		
Income less than expenditure	176	(49.5)
Income equal to expenditure	140	(39.3)
Income more than expenditure	40	(11.2)
Place of residence		
City	140	(39.3)
Town	104	(29.2)
Village	112	(31.5)
Family type		
Large	212	(59.6)
Nuclear	144	(40.4)

Table 2. Clinic characteristics of patients (N=356).

Characteristics	n	(%)
Diagnosis		
Respiratory cancer	88	(24.8)
Gastrointestinal system cancer	96	(27.0)
Breast cancer	72	(20.2)
Urinary system cancer	48	(13.5)
Gynecological cancer	4	(1.1)
Brain and nervous system cancer	16	(4.5)
Head-neck cancer	24	(6.7)
Skin cancer	8	(2.2)
Time of diagnosis		
0-6 months	96	(27.0)
7-13 months	140	(39.4)
14-19 months	76	(21.3)
20-25 months	36	(10.1)
26-31 months	8	(2.2)
Stage of the disease		
Stage 1	64	(18.0)
Stage 2	120	(33.7)
Stage 3	100	(28.1)
Stage 4	72	(20.2)
[a]**Applied treatments**		
Chemotherapy	88	(24.7)
Radiotherapy	164	(46.1)
Chemotherapy + radiotherapy	168	(47.2)
Surgical treatment	108	(30.3)
Perceived disease prognosis		
Good	88	(24.8)
Medium	160	(44.9)
Poor	108	(30.3)
Presence of any chronic disease		
Yes	164	(46.1)
No	192	(53.9)
[a]**Chronic diseases (N=164)**		
Cardiac disease	48	(29.3)
Hypertension	64	(39.0)
Diabetes mellitus	88	(53.7)
Atherosclerosis	28	(17.1)
State of contentment with the received medical treatment		
Yes	264	(74.2)
No	92	(25.8)
If yes, level of contentment (N=264)		
I am slightly contented	40	(15.2)
I am almost contented	164	(62.1)
I am very much contented	60	(22.7)
[a]**What thing/things do you do to alleviate the symptoms?**		
Herbal treatment	145	(40.7)
Regulating diet	118	(33.1)
Praying	138	(38.8)
Doing nothing	56	(15.7)
Previous hospitalization		
Yes	273	(76.7)
No	83	(23.3)
Mean length of hospitalized days	14.6±4.5	

[a] More than one answer was given

(HAD-D), it was 9.0±3.2. In addition, 38.2% of the patients received a score lower than the cutoff score (0-10) on the HAD-A dimension of the scale, and 61.8% of patients received a score above the cutoff score (11-21). Meanwhile, 23.6% of patients received a score below cutoff score (0-7) on the HAD-D dimension of the scale and 76.4% received a score above the cutoff score (8-21; Table 3).

There were significant differences between patients' HAD-A mean scores and variables such as gender (t=1.96, p=0.049), age groups (F=3.219, p=0.023), education level (F=4.982, p<0.001), place of residence (F=6.746, p<0.001), perceived disease prognosis (F=26.193, p<0.001), diagnosis (F=10.046, p<0.001), stage of disease (F=6.455, p<0.001), time of diagnosis (F=2.866, p=0.023), state of contentment with the received medical treatment (t=6.040, p<0.001), and level of contentment with the received medical treatment (F=5.280, p=0.006). Also there were significant differences between patients' HAD-D mean score and their education level (F=2.643, p=0.023), profession (F=3.746, p<0.001), socioeconomic status (F=11.569, p<0.001), presence of any chronic disease (t=2.423, p=0.016), diagnosis (F=12.682, p<0.001), and time of diagnosis (F=3.860, p=0.004).

In this study, it was found that patients' distress prevalence was 78.6%; the highest scores from Symptom Distress Scale were observed for the items of severity of pain (3.43±1.34), fatigue (3.38±1.29), frequency of pain (3.32±1.33), outlook (3.30±1.40), appetite loss (3.22±1.39), and insomnia (3.12±1.44). Patients' Symptom Distress Scale total mean score was 38.91±15.02 (Table 4). There were significant differences between patients' Symptom Distress Scale mean score and their age groups (F=6.447, p<0.001), gender (t=4.558, p<0.001), education level (F=4.371, p<0.001), marital status (F=13.166, p<0.001), socioeconomic status (F=4.093, p=0.017), place of residence (F=3.100, p=0.046), perceived disease prognosis (F=97.408, p<0.001), diagnosis (F=2.443, p=0.019), stage of the disease (F=17.667, p<0.001), time of diagnosis (F=9.807, p<0.001), and state of contentment with the received medical treatment (t=7.354, p<0.001). It was identified that the Symptom Distress Scale total score was higher

Table 3. Patients' mean scores on the Anxiety-Depression Scale.

Scores	Score interval	N	%	Mean±SD	Total mean score
HAD-A scores	0-10 points	136	38.2	7.7±1.7	11.7±3.9
	11-21 points	220	61.8	14.2±2.6	
HAD-D scores	0-7 points	84	23.6	4.7±2.5	9.0±3.2
	8-21 points	272	76.4	10.3±2.1	

Table 4. Patients' mean scores on the Symptom Distress Scale.

Symptom of distress	Mean±SD
Frequency of nausea	2.90±.1.43
Severity of nausea	2.77±1.51
Appetite loss	3.22±1.39
Insomnia	3.12±1.44
Frequency of pain	3.32±1.33
Severity of pain	3.43±1.34
Fatigue	3.38±1.29
Bowel pattern disorder	2.76±1.51
Trouble breathing	2.58±1.45
Coughing	2.50±1.38
Outlook	3.30±1.40
Concentration	2.88±1.52
Appearance	2.82±1.45
Scale total mean score	38.91±15.02

among patients aged 72 and older, women, literate patients, those who were divorced or whose spouses were deceased, those whose income level was lower than their expenditure level, those living in towns, those who perceived the prognosis of disease to be poor, those diagnosed with brain and nervous system cancer or gynecological cancer, those in the third stage of the disease, those diagnosed 14-19 months previously, those who felt discontented with the medical treatment received, and those who defined their contentment with the received medical treatment as low (F=5.280, p=0.006).

On the Self-care Ability Scale, the total mean score of patients was 79.5±22.6 (Table 5). There were significant differences between patients' Self-care Ability Scale mean score and their gender (t=3.335, p=0.001), age group (F=8.804, p<0.001), education level (F=3.160, p=0.008), profession (F=2.773, p=0.012), place of residence (F=11.228, p<0.001), perceived disease prognosis (F=45.015, p<0.001), stage of the disease (F=14.324, p<0.001), time of diagnosis (F=7.979, p<0.001), state of contentment with the received medical treatment (t=7.010, p<0.001), level of contentment with the received medical treatment (F=8.354, p<0.001), and level of the effect of chronic diseases on daily life activities (t=3.793, p<0.001). It was revealed that self-care ability was lower among women, patients aged 36–53, literate patients, housewives, residents in cities and towns, those who perceived the prognosis of the disease to be poor, patients in the third and fourth stage of the disease, patients diagnosed with cancer 20 months before or earlier, those who felt discontented with the received medical treatment, those defined their contentment with the received medical treatment as low, and those whose chronic diseases adversely affected their daily life activities.

Discussion

Among cancer patients, distress, anxiety, and depression are vital factors that affect life quality, compliance with the treatment, severity of the disease, and self-care ability (5, 8). This study is pioneering in the sense that the research was conducted among oncology cancer inpatients hospitalized in a research hospital located in the Central Black Sea region in Turkey. Thus, it provided a cultural interpretation of factors related to patients' distress symptoms, anxiety and depression levels, and self-care ability. This research was executed because healthcare professionals play a critical role in utilizing psychological distress monitoring tools among patients diagnosed with cancer and are crucial in uncovering risk factors and providing psychosocial support. It was identified that among oncology patients, there is a high prevalence of distress, a high

Table 5. Patients' mean scores on the Self-Care Ability Scale.

Items	Mean±SD
1. I would gladly give up some of my set ways if it meant improving my health**.**	2.6±.07
2. I like myself.	2.4±.07
3. I often feel that I lack the energy to care for my health needs the way I would like to.	1.0±.06
4. I know how to get the facts I need when my health feels weak.	2.1±.07
5. I take pride in doing the things I need to do in order to remain healthy.	2.5±.07
6. I tend to neglect my personal needs.	1.6±.07
7. I seek help when unable to care for myself.	2.8±.06
8. I enjoy starting new projects.	2.1±.07
9. I often put off doing things that I know would be good for me.	2.1±.07
10. I perform certain activities to keep from getting sick.	2.5±.07
11. I strive to better myself.	2.5±.07
12. I eat a balanced diet.	2.3±.07
13. I complain a lot about the things that bother me without doing much about them.	1.9±.07
14. I look for better ways to look after my health.	2.4±.08
15. I expect to reach my peak wellness.	2.2±.08
16. I deserve all the time and care it takes to maintain my health.	2.4±.08
17. I follow through on my decisions.	2.2±.07
18. I understand my body and how it functions.	2.1±.07
19. I rarely carry out my resolutions concerning my health.	1.9±.07
20. I am a good friend to myself.	2.4±.08
21. I take good care of myself.	2.3±.08
22. Health promotion is a change thing for me.	2.2±.06
23. I have a planned program for rest and exercise.	2.0±.07
24. I am interested in learning about various disease processes and how they affect me.	2.3±.07
25. Life is a joy.	2.4±.08
26. I do not contribute to my family's functioning.	1.7±.08
27. I take responsibility for my own actions.	2.2±.07
28. Over the years, I have noticed the things to do that make me feel better.	2.6±.07
29. I know what foods to eat and that will keep me healthy.	2.4±.07
30. I am interested in learning all that I can about my body and the way it functions.	2.3±.08
31. Sometimes when I feel sick, I ignore the feelings and hope it goes away.	2.1±.07
32. I seek information to care for myself.	2.3±.07
33. I feel I am a valuable member of my family.	2.5±.07
34. I remember when I my last health checkup was and return on time for my next one.	2.3±.07
35. I understand myself and my needs pretty well.	2.4±.08
Scale's total mean score	79.5±22.6

risk of anxiety and depression, a medium level of self-care ability, and a tendency to resort to complementary treatments to alleviate symptoms.

In this study, it was found that 61.8% of patients had anxiety and 76.4% of patients were at risk of depression. In line with the findings of the present research, Karabulutlu *et al.* (2010) study on Turkish cancer patients' anxiety, depression, and coping level revealed that 61.5% of patients had anxiety and 81.3% of patients had depression (13). In Linden *et al.* (2012) study focusing on anxiety and depression levels of patients after a cancer diagnosis, it was observed that 19.0% of patients had clinical anxiety and 12.9% of patients demonstrated clinical depression symptoms (25). In other relevant research, it was found that patients who received a high HAD score experienced more physical problems (17). Moreover, HAD score has been reported as high among brain cancer patients but low among prostate cancer patients (26).

In the present research, it was identified that the anxiety sub-dimension mean score on the HAD

scale was higher among female patients, patients aged 36-53 years, literate patients and elementary school graduates, those diagnosed with urinary system and respiratory system cancer, and among those at the third and fourth stage of disease. In parallel with findings of this research, it was also identified in similar studies that anxiety scores were high among women (2, 13, 25, 26) and young patients (2, 25, 26). Linden *et al.* (2012) reported that patients diagnosed with lung, gynecological, and hematological cancer exhibited higher levels of distress and anxiety. They stated that among women in general and among female patients diagnosed with gynecological, hematological, head, neck, and lung cancer, the anxiety level was two or three times higher than among men (25). Despite these research findings, in other studies, it was observed that there was no statistically significant difference between variables such as gender and education level and patients' anxiety scores (14). When compared to married or single individuals, the anxiety level was higher among separated or divorced individuals and among patients diagnosed with lung or breast cancer (2).

It was found in this study that the depression sub-dimension mean score on the HAD scale was higher among elementary school graduates, retired patients, those with equal income and expenditure levels, those with a chronic disease, and those diagnosed with head and neck cancer. In a number of relevant studies, similar findings were detected; it was observed that depression was more widespread among oncology patients who had additional disease (27); however, no statistically significant differentiation was identified among variables such as gender (2, 14) and marital status (14) and patients' depression scores (2, 14). Irrespective of the findings of this research, it was detected that depression is higher among young cancer patients and women are more depressed compared to men; however, men diagnosed with prostate, urology, colon, gastrointestinal, lung, head/neck, and brain cancer were more depressed than women, and depression exhibits a slight increase during the onset of stage 1 and at stage 4 (26). Moreover, symptoms of depression are more widespread among elderly, widowed, and lung cancer patients (2).

Linden *et al.* (2012) found that patients diagnosed with skin and prostate cancer had lower levels of depression, and that women were more inclined to experience depression compared to men. Women with lung cancer demonstrated the highest level of depression and young patients were more susceptible to depression (25). Although there have been minor differences in some studies focusing on the anxiety and depression levels of oncology patients, these differences have been attributed to the personal meaning of cancer for the patient, personality attributes, methods implemented in coping with the disease, the stage and type of cancer, the presence of family-friend support, and the attitude of healthcare professionals toward the patient (28).

It was found in this research that patients' distress prevalence was 78.6%, and the Symptom Distress Scale total mean score was 38.91±15.02. In a relevant study, Özalp *et al.* (2007) showed that patients with a higher score on distress scale experienced more severe physical, emotional, and intra-family problems (17). In a different study that contrasted anxiety and depression among cancer patients with the general population, it was observed that the risk of psychiatric distress is two times higher among oncology patients when compared with the general population (26). As also highlighted in the relevant literature, it matters greatly to detect emotional problems among oncology patients during the early stages of the disease; it would therefore be useful to employ psychological distress monitoring tools such as Question Prompt Lists and Patient Question Prompt Lists, which could make it easier to diagnose such symptoms (29).

It was seen in the present study that patients received the highest scores on the Symptom Distress Scale on the severity of pain, fatigue, frequency of pain, outlook, appetite, and insomnia items, in that order. Although the treatments received by oncology patients affected the symptoms they experienced, it was observed in a number of relevant studies that problems such as sleeping difficulty, taste changes, appetite loss, nausea, hair loss, and bowel pattern disorder were only common among patients receiving only chemotherapy. Moreover, it was common to see taste changes, appetite loss, pain, and consti-

pation among patients receiving only radiotherapy. Finally, among patients receiving both chemotherapy and radiotherapy, there were symptoms of sleeping difficulty, taste changes, appetite loss, weight loss, aphagia, sore throat, nausea, and vomiting (30). When patients receiving radiotherapy combined with chemotherapy were compared with patients receiving only chemotherapy, they reported more severe symptoms related to their treatment (31). It is considered that the support that oncology patients receive from family members and friends and positive attitudes of healthcare professionals in assisting patients to cope with such symptoms and changes in their health status play a remarkably important role in the smooth course of this process (9).

It was identified in this study that the Symptom Distress Scale total score was higher among patients aged 72 and older, women, literate patients, those who were divorced or had a deceased spouses, those whose income level was lower than their expenditure level, those living in towns, those who perceived the prognosis of disease to be poor, those diagnosed with brain and nervous system cancer or gynecologic cancer, those in the third stage of disease, and those diagnosed with the disease 14-19 months previously. In parallel with these research findings, Strong *et al.* (2007) showed that the distress level was higher among women diagnosed with ovarian and gynecological cancer (32); in contrast Kim et al. (2011) claimed that patients' distress level was independent of variables such as a age, marital status, type and stage of cancer, and time of diagnosis (33). Herschbach *et al.* (2004) demonstrated in their research that patients diagnosed with soft tissue cancer and breast cancer had the highest level of stress, whereas those with gastrointestinal system and urinary system cancer had the lowest level of stress. They also showed that distress levels were higher among patients aged 40-49, women, patients with metastasis, and patients coping with the disease for 6 months to 2 years or 2–5 years (34). In this study, it was seen that as patients' education level increased, there was a decline in their Symptom Distress Scale total score; thus, it is considered that patients with a higher education level can better manage their stress.

In this study, it was observed that in order to alleviate or mitigate the experienced symptoms, patients most frequently resorted to biology-based therapies (40.7% herbal treatment, 33.1% diet regulation) and mind-body control (38.8% prayer). In a different study conducted to investigate the use of complementary and alternative treatments by Turkish cancer patients (35), it was revealed that those who had cancer and comorbidity in their own family history more frequently resorted to complementary and alternative treatment methods; 67.3% of patients used herbal treatment, 14.9% used vitamins, and 10.7% engaged in meditation, yoga, acupuncture, massage, or prayer. The most common herb was dead nettle with a, percentage of 55.5%, followed by dried grapes, with a percentage of 26.9% (35). It was similarly found in the present research that herbs and plants were highly used, but it is considered that this prevalence can be attributed to the cultural habits in Turkey, where herbal treatments are often used as common remedies because it is easy to find herbs and plants. In addition, the research area – the Central Black Sea Region – is a territory in which herbs and plants are a major component in the dietary habits of locals; hence, the prevalence of herbal treatment might be explained with this trend as well.

It was seen in this research that patients perceived their self-care abilities to be at a medium level. Self-care ability was lower among women, patients aged 36-53 patients, literate patients, housewives, those perceiving the prognosis of disease to be poor, those in the third and fourth stages of the disease, and those diagnosed with cancer 20 months ago or before. Altıparmak *et al.* (2011) study aimed to detect the relation between self-care ability and life quality among lung cancer patients receiving chemotherapy; the researchers only found a statistically significant difference between educational status and self-care ability. Echoing the findings of our research, when compared with other groups, it was seen that self-care ability is stronger among patients with elementary and higher levels of education (36). In Üstündağ and Zengin's (2008) study conducted to detect self-care ability among patients who received surgery due to head-neck cancer, similar to the self-care ability findings of the present research,

the level was high among men. However, unlike the findings of our research the authors above reported that the level was higher among high school graduates, those with a job, and those in the age group of 33-47 years (37). Those differences witnessed in the self-care abilities of oncology patients may have stemmed from the research methodology or personal and clinical characteristics of the patients. In addition, the high level of self-care ability score among male patients in this research could be attributed to the fact that male patients have a higher education level than female patients. However, the findings ultimately indicate that education has an effect on health behaviors, and as the education level increases, the individual's self-care ability is also enhanced.

It was also found in this study that among those who were not content with the received medical treatment, those who defined their contentment level with medical treatment as poor, and those whose chronic diseases adversely affected their daily life activities had lower level of self-care ability. It is possible that discontent with the received medical treatment could have been why patients sought alternative treatment options to manage the disease and its symptoms. Indeed, in the present study, although 74.2% of patients expressed their contentment with the received medical treatment, 84.3% noted that they had resorted to complementary methods. When healing approaches seem to be inefficient or simply impossible to use, patients resort to complementary methods to cope with the side effects of medical treatment and the disease itself, prevent cancer recurrence, boost life quality and the immune system, and improve general well-being (38).

In a study conducted to identify the self-care applications of oncology patients and the methods they used to manage cancer-induced symptoms (39), it was observed that patients resorted to methods such as dietary, nutritional, and lifestyle changes, (changing food and drink options, using food supplements, napping, sleeping, resting) and mind-body control (praying, counting beads, listening to music). In a different study on the same topic (30) it was seen that to manage their eating difficulties, oropharynx symptoms, and fatigue symptoms, patients resorted to dietary/lifestyle changes (changing food options, changing former habits, and resting); to manage fatigue symptoms, hair loss, numbness in fingers and toes, dyspnea, and taste change symptoms, mind-body control (praying, listen to Buddha preaching) were the most popular complementary treatments. Chou *et al.* (2007) conducted a study to reveal symptoms, self-care, and life quality among Chinese-American patients and discovered that 20% of patients resorted to specific Chinese herbal medicine methods (40). Moreover, in a relevant study conducted by Williams *et al.* (2010) patients employed dietary/nutritional/lifestyle changes (changing food, eating habits, vegetables, using food supplements, napping, sleeping, resting), mind/body control (reading, adjust mood), biological treatments (vitamins), and Chinese herbs/drugs (to fight against fever, constipation and insomnia) (39).

Limitations

In this study, data were collected via a self-evaluation-based questionnaire form. The limitations of this study are that obtained findings were not determined through synchronous clinical interviews conducted with the patients and that recurrent measurements were not used to evaluate patients' anxiety and depression levels and self-care abilities.

Conclusion

In the present study, it was discovered that the distress prevalence among oncology patients was 78.6%; 61.8% of patients were at risk of anxiety and 76.4% were at risk of depression. Moreover, 84.3% of patients resorted to complementary treatments (herbal treatment, regulating diet, praying) in order to alleviate or mitigate the symptoms they experienced. Cancer patients' sociodemographic and clinic characteristics affected their distress, anxiety, depression, and self-care abilities. In light of these findings, the following recommendations can be made:

- Distress monitoring programs should be applied, making it easier to diagnose distress

among oncology patients and identify the correct approach for treatment;
- The relevant treatments and support pursued to alleviate or cure the disease should be identified, since alternative methods may affect the medical treatment applied to oncology patients;
- Physical and psychosocial risk factors should be identified that may lower the self-care abilities of oncology patients and induce depression and anxiety among patients; and
- Undergraduate and postgraduate training should be provided to oncology healthcare personnel wherein cancer and its treatment, side effects, and symptom management is analyzed at length.

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