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ORIGINAL ARTICLE

EXAMINATION OF MENTAL SYMPTOMS, ANGER, AND DEATH ANXIETY IN ELDERLY CANCER PATIENTS

ABSTRACT

Introduction: Cancer is a disease that changes a person's expectations about death and life. The needs of elderly cancer patients differ according to other age groups. This study aims to reveal the relationship between psychological symptoms and death anxiety and anger expression in elderly patients diagnosed with cancer.

Methods: Scales assessing anxiety, depression, death anxiety, and anger were administered to patients over 65 years of age diagnosed with cancer. Patients were asked about the type of cancer, when it was diagnosed, and what treatment they received. They were also asked with whom they lived and with whom they came to check.

Results: Of the 201 patients included, 18.9% were diagnosed with anxiety disorder and 17.9% with depression. A high positive statistically significant correlation existed between anxiety and depression symptoms (r=0.755, p<0.001). There was a moderately positive and statistically significant correlation between anxiety symptoms and death anxiety (r=0.599, p<0.001) and state anger (r=0.504, p<0.001). A one-unit increase in state anger score increases the risk of developing depressive symptoms by 11%, while a one-unit increase in death anxiety increases the same risk by 10.6%. When we analyzed according to cut-off values, 124 (61.7% of the whole sample), participants had high death anxiety.

Conclusion: Psychological symptoms in elderly cancer patients seem to be associated with death anxiety and anger. Death anxiety should not be considered a natural consequence of getting cancer. Screening for mental symptoms during stressful times can help identify psychological needs and provide targeted psychological support for the elderly.

Keywords: Mental Health; Aged; Anger; Neoplasms.

INTRODUCTION

The second leading cause of death in 2018 was cancer and cancer incidence increases dramatically with age. Approximately 60% of all cancers occur in individuals aged 65 and older (1). After being diagnosed with cancer, patients experience severe mental health issues, such as anxiety and depression. The diagnosis of a fatal disease such as cancer is a negative stressor that severely affects patients' physical and mental health (2).

Cancer is considered a life-threatening disease synonymous with pain and suffering. Cancer diagnosis causes psychological distress, includes emotional problems for the patient and causes significant changes in social or family roles. Mood disorders, especially anxiety and depression, develop at a rate of approximately 30% in patients (3). Problems arising from physical illness and treatment-related side effects cause anger in patients. When the relationship between anger and cancer is examined, it has been reported that anger is the first emotion shown in response to a cancer diagnosis (4).

Advances in modern medical techniques prolong cancer patients' life span, but cancer is still synonymous with death. During this period, when patients can approach their last days, their fear of death also increases. Various studies on the effects of disease progression on death anxiety in patients with physical problems show that death anxiety becomes a critical problem, especially in a specific disease, such as cancer (5). It is essential to define, measure and control the predictors of death anxiety, related variables and the factors affecting anxiety in the elderly. In this context, the present study aims to determine the magnitude of mental problems in elderly cancer patients and reveal the effects of death anxiety, anger and anger expression styles on mental health.

MATERIALS AND METHODS

Study Design

Our study is a cross-sectional examination of elderly cancer patients. The study included 201 cancer patients who met the inclusion criteria and applied to the Medical Oncology outpatient clinic between May and June 2022. Before beginning, each participant was required to examine the purpose of the study and provide consent based on that understanding. Participants were also informed that their participation in the study was entirely voluntary and that they could disengage at any time. Participants were not compensated for their involvement in the research. The research was conducted by the Helsinki Declaration and with the Clinical Research Ethics Committee's approval (No. 9/223 of 19 Apr 2022).

Inclusion and exclusion criteria

The inclusion criteria for the study included being at least 65 years old, consenting to participate, and signing a consent form. Those under age 65, those with mental retardation, dementia, psychiatric diseases that impair discernment, and those with organic mental disorders were excluded.

Query variables

Sociodemographic and general information

Participants were questioned if they had a diagnosed chronic illness or mental health issue. Male or female was documented as the gender alongside the age. There were married, single, and divorced/widowed categories for marital status. They were requested to indicate the quantity and presence of their children. Participants were asked whether they resided in a city or a rural area. It was questioned with whom they live and with whom they come to the outpatient clinic controls. It was asked when they were diagnosed with cancer and what treatment they were currently receiving. The responses regarding the time of diagnosis were

categorized as first year, one to two years, three to five years, and over five years. Also, participants were asked whether someone in the family had been diagnosed with other cancer.

Assessment of Psychological Symptoms

The Hospital Anxiety and Depression Scale (HADS) comprised 14 items used in this study (6). The self-assessment scale was designed specifically for use in hospital settings, assessing the patient's anxiety and depression level and severity change. As a psychological screening instrument, it has been demonstrated that the scale yields clinically relevant results when applied to various diseases and clinical populations. The scale contains 14 items, including subscales HAD-A (seven questions) and HAD-D (seven questions) for anxiety and depression, respectively. Each item is rated on a 4-point Likert scale, and the maximum score for each sub-dimension is 21. Scores exceeding 10 indicate the possibility of psychological morbidity. Made were Turkish validity and reliability. The internally consistent reliability coefficients for the anxiety and depression subscales of the Turkish versions of the HADS were 0.85 and 0.78, respectively (7). The scale was also validated with cancer patients (8).

Assessment of Death Anxiety

Developed by Templer in 1970, the Death Anxiety Scale (DAS) is a 20-item self-report scale that assesses an individual's anxiety and fears about death (9). Sarıkaya conducted validity and reliability evaluations of the scale in Turkey in 2016 (10). On a Likert-type scale, questions have five answer options: never (0 points), rarely (1 point), occasionally (2 points), frequently (3 points), and always (4 points). The scale contains numbers between 0 and 80. High scores indicate a heightened fear of mortality.

Assessment of Anger

The State-Trait Anger Expression Inventory (STAXI) was used in our study as a standard measurement instrument for anger, emotion, and expression. Spielberger et al. devised the self-assessment scale

in 1988, and Ozer adapted it to Turkish in 1994 (11, 12). It consists of four dimensions as a four-point Likert type (1: Never defines, 2: Some define, 3: Highly defines, 4: Defines) and a scale consisting of a total of 34 items, including State Anger (SA, ten items), Anger-in (AI, eight items), anger-out (AO, eight items), and anger-controlled (AC, eight items). High scores on the SA dimension indicate a high level of anger, high scores on the AI dimension indicate anger that is suppressed, and high scores on the AO dimension indicate that anger can be expressed readily. High scores on the AC dimension suggest that anger is controllable. The scores obtained in each size are added together, and the participants' scores are separately calculated for four sizes. Ozer conducted a reliability study and reported the following internal consistency coefficients for the scale: 0.79 for the SA dimension, 0.62 for the AI dimension, 0.78 for the AO dimension, and 0.84 for the AC dimension.

Statistical Analysis

Version 26 of the SPSS program was used to conduct the statistical analyses. Analytical methods (Kolmogorov Smirnov/Shapiro-Wilks test) were used to determine whether the variables had a normal distribution. Descriptive analyses employed medians and minimum and maximum values for non-normally distributed and ordinal variables. Categorical values were presented as frequencies, and continuous variables with normal distribution were presented as mean and standard deviation (percentages). Where applicable, the Chi-Square or Fisher exact test was used to compare the proportions of these variables between groups (when chi-square test predictions do not hold due to low predicted cell counts. The importance of pairwise differences was tested using the Mann-Whitney U test with Bonferroni correction to account for multiple comparisons. The Spearmen correlation test was used to measure the correlation coefficients and their importance when examining

the relationships between non-normally distributed and ordinary variables. A statistically significant result had a p-value of less than 0.05. The sample size calculation was calculated as 134 with a 95% confidence interval and an effect size of moderate effect size. ROC curves were calculated to determine a cutoff for anxious and depressive states in cancer patients. The area under the curve (AUC), sensitivity, and specificity, along with their respective 95% confidence intervals (95% CI), were calculated (13).

RESULTS

General Characteristics

A total of 201 people with cancer took part in the study. Of these, 94 (46.8%) were women, and 107 (53.2%) were men, while the median age was 70 (65-90) years. 76.6% (n=154) of the participants were married, and 23.4% (n=47) were single. 90.5% of participants graduated from primary school, 6.5% from secondary school, and 3% from university. There were various cancer types that the participants had. Most participants had gastrointestinal tumors (26%, or n=54), lung, urinary tract, and breast cancers (each 15.4%, n=31). Twenty-one participants (10.4%) had gynecological tumors, and 20 (10%) had head and neck tumors. Half of the people who took part lived in cities (n=101), and half (n=105) had a family cancer history. When examining who attended the controls, it was determined that the majority (90%) arrived with a family member, whereas 10% came alone. Whereas 137 (68.2%) participants had a chronic illness, 29 (14.4%) also had a psychiatric disorder. 31.8% of these participants had been diagnosed with cancer within the last twelve months, 29.9% in 1-2 years, 20.4% in 3-5 years, and 17.9% in 5 years and more. Those with a score of 11 or higher were the most likely to have experienced anxiety (18.9%) or depressive (17.9%) disorders. 53.7% (n=123) of the participants were patients whose treatment had been completed and attending check-ups, while 21% (n=48) had metastatic treatment. When the treatment type categorized individuals, 130 (53.9%)

received chemotherapy, and 37 (15.4%) received radiotherapy.

When the demographical features were compared on the scales that DAS, HADS-A, HADS-D, there were only statistically differences between participants used smart drugs and HADS-A scale scores (p=0.021). For participants who were using smart drugs, HADS-A scores were significantly higher than the participants who did not use smart drugs. All the mean/median (min-max) scores and some sociodemographic data are shown in Table 1.

Comparing the state-anger and anger expression of the participants with their sociodemographic information revealed no significant differences by gender, type of cancer, presence of other chronic disease/psychiatric disease, use of chemotherapy or smart drug therapy, or with whom the patient lived and came the control. However, who took radiotheraphy had significantly higher scores of anger-out and anger-in (p=0.025; p=0.037) as shown in Table 2.

Correlations of All Scale Scores

The mean DAS score for the whole group was 23.17±18.69, and the mean HADS-A score was 6.97±4.64. HADS-D score was 7.69±4.54. There was a medium positive statistically significant correlation with HADS-A, DAS (r=0.599, p<0.001) and state-anger (r=0.504, p<0.001). As we know there was a high positive statistically significant correlation between HADS-A and HADS-D (r=0.755, p<0.001). There was a moderately negative correlation between state-anger and anger-control (r=-0.406, p<0.001). There was a weak positive statistically significant correlation between anger level and DAS (r=0.208, p=0.003). All correlations are shown in Table 3.

Logistic Regression Analysis

After the correlation, a Logistic Regression Analysis Backward: LR style was conducted to determine the

Table 1. Comparison of mean DAS, HADS-S, HADS-D results, and sociodemographic features

	DAS (mean±SD)		HADS-A (mean±SD)	p value	HADS-D (mean±SD)	p value
Gender						
Women	22 (0-62)	0.211	7.44±4.34	0.086	8.21±4.15	0.070
Men	20 (0-61)		6.56±4.87		7.22±4.83	
Marital Status						
Married	23.32±19.17	0.709	7.02±4.82	0.350	7.53±4.55	0.988
Single	17.22±2.51		6.81±4.05		8.19±4.52	
Educational Status						
Primary School	23.69±18.55		7.05±4.60		7.72±4.43	
Secondary School	16.85±18.12	0.715	6.00±4.43	0.918	7.54±5.50	0.322
University	21.17±24.73		6.67±6.56		7.00±6.57	
Diagnosis time						
0-12 months	24.69±19.98		7.09±4.81		8.03±4.95	
1-2 years	22.02±18.17	0.929	7.02±4.56	0.541	7.50±4.33	0.913
3-5 years	20.15±3.15		6.54±4.81		7.00±4.67	
5 years and more	22.25±15.82		7.17±4.42		8.17±4.05	
Type of Cancer						
Head & Neck	25.40±5.42		6.10±5.24		5.95±5.32	
Gastrointestinal system	23.72±5.06		6.78±5.02		7.54±4.84	
Lung	23.58±5.13		7.29±5.35		7.97±5.17	
Urinary Tract	23.16±4.37	0.265	6.81±4.40	0.904	7.16±4.24	0.455
Breast Cancer	22.52±4.66		6.74±3.94		7.84±3.92	
Gynecological	22.43±3.90		7.71±3.93		9.00±3.71	
Other	21.46±3.41		8.08±3.90		9.08±3.40	
Chronic Disease						
Yes	23.08±4.94	0.291	7.25±5.02	0.479	7.77±4.42	0.931
No	23.42±4.71		6.84±4.46		7.65±4.62	
Psychiatric Disease						
No	23.46±4.84	0.383	6.73±4.72	0.082	7.47±4.63	0.190
Yes	22.45±4.35		8.38±3.91		9.00±3.81	
Chemotherapy						
No	23.08±4.94	0.279	7.25±5.02	0.063	7.77±4.42	0.232
Yes	23.42±4.71		6.84±4.46		7.65±4.62	
Radiotherapy						
No	23.05±4.53	0.143	7.19±4.42	0.167	7.98±4.29	0.071
Yes	24.46±5.67		6.00±5.46		6.38±5.42	
Smart drug						
No	23.61±5.08	0.268	6.39±4.66	**0.021**	7.46±4.84	0.352
Yes	22.80±4.16		7.97±4.46		8.08±3.98	
Family Cancer History						
No	23.72±4.66	0.246	6.71±4.49	0.399	7.55±4.45	0.549
Yes	22.86±4.87		7.25±4.80		7.83±4.66	

DAS: Death Anxiety Scale, HADS-A: Hospital anxiety and depression scale, anxiety part; HADS-D: Hospital anxiety and depression scale, depression part

Table 2. Comparison of state-anger, anger-out, anger-in, anger-control and sociodemographic features

	State-anger	P	Anger-out	p	Anger-in	p	Anger-control	p
Gender								
Men	20 (10-40)	0.319	23 (8-32)	0.194	25 (9-36)	0.965	24 (11-32)	0.889
Women	19 (10-40)		21 (8-120)		25 (11-36)		23.5 (11-32)	
Educational Status								
Primary School	19 (10-40)		21 (8-120)		24 (9-36)		24 (11-32)	
Secondary School	25 (10-31)	0.578	2.46±6.06	0.168	26 (17-36)	0.336	23.54±6.02	0.258
University	24.00±10.41		24 (16-32)		26.00±7.04		25.83±3.31	
Place of residence								
City	19 (10-40)	0.648	23 (8-32)	0.194	26 (9-36)	0.198	24 (11-32)	0.070
Rural area	20 (10-40)		20.5 (8-120)		22.5 (9-36)		23 (11-32)	
Type of Cancer								
Head & Neck	18 (10-40)		22 (11-32)		24 (17-36)		24 (13-32)	
Gastrointestinal system	23 (10-40)		23 (9-120)		26 (9-36)		24 (11-32)	
Lung	22 (10-40)		22.23±6.75		25 (9-36)		24 (13-32)	
Urinary Tract	18 (10-30)	0.430	20 (8-32)	0.147	23.77±6.36	0.479	23.16±4.37	0.265
Breast Cancer	17 (10-40)		20.23±6.23		22 (14-36)		23 (14-32)	
Gynecological	21.38±9.16		17 (10-24)		21.76±5.59		23 (16-29)	
Other	20.86±9.05		23 (8-26)		22.54±5.36		21.46±3.41	
Chronic Disease								
No	19.5 (10-40)	0.686	20 (8-32)	0.669	22 (11-36)	0.540	22.5 (14-32)	0.291
Yes	20 (10-40)		23 (8-120)		25 (9-36)		24 (11-32)	
Psychiatric Disease								
No	19.5 (10-40)	0.733	22.5 (8-120)	0.819	25 (9-36)	0.914	24 (11-32)	0.383
Yes	20 (10-40)		20.79±5.14		22 (16-36)		23 (15-32)	
Chemotherapy								
No	20 (10-40)	0.733	24 (8-32)	0.374	26 (9-36)	0.459	23 (11-32)	0.279
Yes	18 (10-40)		20 (8-120)		22.5 (9-36)		24 (11-32)	
Radiotherapy								
No	19.5 (10-40)	0.689	21 (8-120)	**0.025**	24 (9-36)	**0.037**	23.5 (11-32)	0.143
Yes	20 (10-40)		24 (11-32)		27 (14-36)		24 (13-32)	
Smart drug								
No	18 (10-40)	0.119	21 (8-120)	0.974	25 (9-36)	0.922	24 (11-32)	0.268
Yes	20 (10-40)		23 (10-32)		25 (9-36)		23 (14-32)	
People attending check-up								
With Child	19.5 (10-40)		22 (8-120)		25 (9-36)		24 (11-32)	
With Spouse	20 (10-40)	0.640	22.5 (9-32)	0.220	24.5 (9-36)	0.201	24 (13-32)	0.824
With a person from family	18 (10-40)		17.46±6.02		21.00±4.78		22.85±4.62	
Alone			24 (8-32)		27 (14-36)		24 (16-32)	

Table 3. Correlations of all scale scores

	HADS-A	HADS-D	State-anger	Anger-in	Anger-out	Anger-control	DAS
HADS-A	1						
HADS-D	0.755**	1					
State-anger	0.504**	0.419**	1				
Anger-in	-0.158*	-0.333**	0.137	1			
Anger-out	-0.186*	-0.322**	0.098	0.888**	1		
Anger-control	-0.386**	-0.443**	-0.406**	0.421**	0.511**	1	
DAS	0.599**	0.488**	0.208**	-0.184**	-0.218**	-0.287**	1

HADS-A: Hospital anxiety and depression scale, anxiety part; HADS-D: Hospital anxiety and depression scale, depression part; DAS: Death anxiety scale. *p<0.05 **p<0.001

Table 4. Logistic regression analysis for groups with and without anxiety and depression symptoms

Predictors for HADS-A	β	S.E	p	OR
Age	-0.064	0.031	0.037	0.938
State-anger	0.107	0.024	<0.001	1.113
Anger-control	-0.110	0.045	0.016	0.896
DAS	0.069	0.012	<0.001	1.072
Predictors for HADS-D				
Gender(1)	1.456	0.422	0.001	4.290
Place of Residence (1)	1.223	0.407	0.003	3.396
State-anger	0.125	0.032	<0.001	1.133
Anger-out	-0.078	0.042	0.061	0.925
Anger-control	-0.108	0.056	0.053	0.898
DAS	0.060	0.013	<0.001	1.061

HADS-A: Hospital anxiety and depression scale, anxiety part; HADS-D: Hospital anxiety and depression scale, depression part; DAS: Death anxiety scale; S.E: Standard Error; OR: Odds Ratio

anxiety and depression symptoms' predictors. The regression analysis included age, gender, educational status, cancer type, diagnosis time, with whom and where he lived, with whom attended the check-ups, presence of chronic disease and psychiatric disease, and all scale scores. Analysis results are shown in Table 4 and contain essential determinants of the last stage of the Retrospective style.

A unit increase in the State-anger score increased the likelihood of developing anxiety symptoms by 11%, whereas a unit increase in the DAS score increased the same risk by 10.6%. A one-unit increase in Anger-control increased the likelihood of developing symptoms by 10.2%.

Being female increased the risk of developing depressive symptoms by nearly 4.3 times, whereas

living in a rural area increased the risk by nearly 3.4 times. A unit increase in the State-anger score increased the risk of developing depression symptoms by 11%, whereas a unit increase in the DAS score increased the same risk by 10.6%. One unit increase in Anger-out and Anger-control scores was associated with a 7.5% and 10.2% increase in symptom occurrence, respectively.

ROC Analysis

The effectiveness of DAS and STAXI scores was assessed using Receiver Operating Characteristic (ROC) curves. The optimal cut-off value for the DAS was greater than 19 units. STAXI was greater than 22.5 (Figure 1). The AUC was 0.74 (95% CI 0.66–0.82), with a sensitivity of 92% and a specificity of 55% for DAS and the AUC was 0.77 (95% CI 0.70–0.84), with a sensitivity of 74% and a specificity of 66% for STAXI (Both p<0.001). When we analyzed according to the cut-off values, 83 (41.3% of the

whole sample) participants had high anxiety, and 124 (61.7% of the whole sample), participants were high death anxiety.

DISCUSSION

The current study investigated the relationships between death anxiety, anger level and mental symptoms and focused on predictors for developing mental symptoms. Our study's analysis shows a connection between the psychological symptoms seen in cancer patients, death anxiety and anger. As death anxiety increases in elderly cancer patients, anger also increases. As the level of anger rises, it becomes more difficult to control one's anger. No studies have examined the relationship between mental symptoms, death anxiety, and rage in cancer patients over 65. As a result of the analysis, it has been shown that an increase in anger and death anxiety levels increases the probability of developing anxiety and depressive symptoms. It
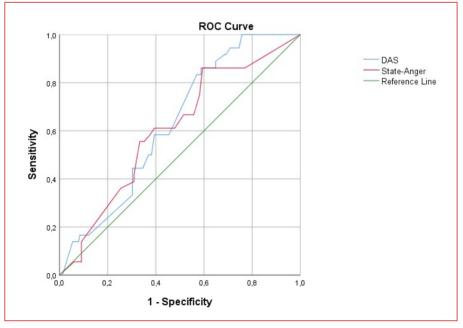

Figure 1. Roc curves of DAS and State-Anger

DAS: Death Anxiety Scale

has also been found that being a woman and living in a rural area increases the risk of developing symptoms of depression.

Relationship with Mental Symptoms and Cancer

In a study examining the mental health problems of elderly cancer patients and associated factors, 85.1% and 81.7% of patients exhibited anxiety and depression, respectively (14). The study's results, in which 159 cancer patients were analyzed, show that depression directly increased with age (15). In our sample of patients, all above the age of 65, 18.9% were diagnosed with anxiety disorders and 17.9% with depression. In our study, 14.4% of the participants had a history of psychiatric illness. There was no significant difference between those with and without a history of psychiatric disease regarding anxiety and depression symptoms occurring during cancer. Once mental health problems are identified, psychosocial interventions can reduce cancer patients' distress and improve their quality of life, regardless of their prognosis.

The current literature has no consensus regarding the extent to which gender can induce psychological distress in cancer patients. According to a large-sample study, the prevalence of clinically significant psychological distress was 43.8%, and there was no significant difference between the sexes (16). Similar to our research, in a study conducted with elderly cancer patients, no significant difference was reported between the two genders regarding the prevalence of psychological distress (17). More than half of our sample consisted of men, and when gender and anxiety and depression levels were compared, no significant difference was found between the two groups. However, the analysis concluded that being a woman increased the risk of developing symptoms of depression.

Mixed anxiety/depression symptoms were observed at higher rates in malignancies of the pancreas, gastric, head/neck, and lungs but at lower rates in breast cancer patients (18). Depression is strongly linked to lung, pancreatic, oropharyngeal, and breast malignancies. It has been reported that patients with lymphoma, gynecological, and colon malignancies experienced less depression (19). In our study, 26% of participants had cancer of the gastrointestinal tract, and there was no significant difference in psychological symptoms between cancer categories. Patients with gynecological cancer had a higher mean HADS-D score than patients with other cancer categories, but no significant difference existed between psychological symptoms and cancer types. Similar to our findings, studies have found no significant difference in psychological distress scores between patients based on cancer location and type (16, 17). The fact that the psychological distress of cancer patients depends on the location of the disease demonstrates that they should not be considered a homogenous group. Future research may emphasize psychological distress in patients with the same type of cancer but receiving various treatments.

Death Anxiety in Elderly Cancer Patients

The results of a meta-analysis designed to predict the rate of death anxiety in cancer patients and the factors influencing its occurrence revealed that death anxiety in cancer patients was moderate and influenced by sociodemographic factors, such as region, cancer type, gender, and marital status (5). In a study examining death anxiety and related factors in elderly cancer patients, 42% were found to have elevated death anxiety. Also, it was shown that men contemplated mortality more frequently than women, but women experienced more significant death anxiety than men (19). Similarly, 61.7% of our sample of elderly cancer patients exhibited high levels of death anxiety. In an investigation of racial and gender disparities in death anxiety, race, and gender were found to have a significant impact on

death anxiety. It has been established that death anxiety and psychological distress were more prevalent in women than males, both in the general population and among cancer patients (20). In our study, the ratio of women to men was almost equal among the participants. When the scores from the death anxiety scale were examined, the average scores of the women were higher, but there was no statistically significant difference between them. The results suggest that healthcare providers can effectively address the fear of death in elderly patients by tailoring their approaches based on race and gender. It is recommended that healthcare providers consider this approach when working with elderly patients to improve their patients' overall well-being.

There is a statistically significant correlation between death anxiety and marital status in elderly patients, as demonstrated. Married participants experienced significantly higher levels of death anxiety than single participants (5). Regarding this discovery, there have been contradictory findings. According to a different study, widowed women experienced more significant death anxiety than those whose spouses live (21). In our study, most of the patients were married, and death anxiety levels were higher in married people, but no statistically significant difference was found.

It has been shown that death anxiety increases with the duration of the illness. It has been reported that fear of recurrence was a significant predictor of death anxiety and was positively related (20). It has been reported that patients were relatively agitated, anxious, and restless in the first period after diagnosis and more stable after three months, and death anxiety recurred between 3 and 6 months. It has been found that the initial anxiety and tension reappeared due to stress (22). In our study, the death anxiety level was highest in the first year following the cancer diagnosis; it tended to increase again after five years. The result may be due to the progression of the disease, a longer

duration of cancer, treatment side effects and chemotherapy, and patients' gradual exposure to the reality of their disease and dread of pain and suffering.

Although the mean scores obtained from the death anxiety scale of our study were the highest in head and neck cancers, no statistically significant difference was found when cancer types and death anxiety levels were compared. Breast cancer is scary and tragic for many women, so these patients show feelings of death, anxiety, and anger. It has been shown that patients with breast cancer experience high levels of depression, anxiety, anxiety about relapse, and fear of death. (23). A study investigating death anxiety in female cancer patients showed that patients with higher mental well-being had less anxiety about death (24). Reducing death anxiety in cancer patients should be considered in improving mental symptoms during cancer treatment.

The Relationship Between Cancer and Anger

Anger is one of the most common reactions, especially in the face of a physical illness that can cause death, such as cancer. It has been found that 9–18% of advanced cancer patients experience intense anger that causes clinical concern. Some research has shown that it may be helpful for patients to activate their anger to fight their cancer (4). In our study, according to cancer type, the highest anger level was reported in patients with gastrointestinal tumours, but there was no statistically significant difference. Considering the kind of treatment received, patients who received radiotherapy received high scores in the sub dimensions of suppressing and expressing anger compared to other treatment types. In a study of older women with breast cancer, lower anger/ aggression scores in women with medium and high education levels were interpreted as having more advanced coping systems than women with low education levels (25). In our study, patients

with breast cancer had lower anger levels than other cancer types. Still, no statistically significant difference was found between anger levels and cancer type, including gender and education level. Longitudinal studies are needed to measure anger and other moods throughout the disease, showing the results of anger interventions.

Future research should account for the limitations of the present investigation. Due to the study's cross-sectional design, only a fleeting snapshot of cancer patients' moods at the time of measurement is presented. When a person receives a life-threatening diagnosis, even if they are ordinarily calm, tension can cause anger to surface. In contrast, after surviving a rigorous chemotherapy regimen or invasive surgery, a sense of calm and happiness may prevail. Second, a larger sample size would be beneficial to increase the statistical power and generalizability of the results. Given the small sample size and different types of cancer, some subgroups are underrepresented. One of the limitations of our study is that the participants were not asked about their experience in the hospital, where they had difficulty controlling anger during treatment.

Controlling levels of death anxiety and wrath may prevent the development of mental symptoms in elderly cancer patients. Assessing psychological distress during times of stress can aid in identifying psychological requirements, thereby facilitating targeted psychological support. Therefore, the study's results may improve understanding of individual responses in elderly cancer patients. Future studies should more specifically explore the role of gender, which is still unclear, and enhance the understanding of the relationship between mood symptoms, death anxiety, and anger expression. Longitudinal studies should be planned to determine whether changes in fear of death in cancer patients are related to psychological distress, anger, and disease course.

CONCLUSION

It is recommended that cancer patients be screened for psychiatric symptoms because of its association with non-adherence to treatment and poor prognosis. Individual, cultural, and social factors affect the death anxiety of cancer patients. It has been shown that the design and implementation of psychological interventions sensitive to these factors and targeting death anxiety positively affected patients. Screening for mental symptoms during stressful times can help identify psychological needs and provide targeted psychological support. This article may enable healthcare professionals to evaluate common psychiatric disorders such as anxiety and depression in elderly cancer patients, to realize the importance of fear of death in the elderly, and to understand patients' anger. The results will guide future efforts to improve the psychological health of older cancer patients.

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