

Depression, Anxiety and Distress in Patients of Cancer Starting Chemotherapy

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Abstract

A cancer diagnosis can have a huge impact on most patients, families, and caregivers. Feelings of depression, anxiety, and fear are very common and are normal responses to this life-changing experience. Many things can cause these feelings. Changes in body image can affect self-esteem and confidence. Family and work roles may be altered. People might feel grief at these losses and changes. Physical symptoms such as pain, nausea, or extreme tiredness (fatigue) also seem more likely to cause emotional distress. People might also fear death, suffering, pain, or all the unknown things that lie ahead. Family often has these feelings, too. They may be afraid of losing their loved one. They may also feel angry because someone they love has cancer, frustrated that they “can’t do enough,” or stressed because they have to take on more at home. People with cancer, as well as their friends and family, can feel distress about these things at any time after a cancer diagnosis, even many years after the cancer is treated. As the cancer situation changes, they all must cope with new stressors as well as with the old, and their. **Objectives:** Assessment of depression, anxiety and distress in patients starting chemotherapy was done to study the level of later complications. **Methods:** A cross-sectional study including all consecutive oncology patients, 18 years of age or above, starting chemotherapy for the first time. Patients were assessed on the first day of treatment with the Hospital Anxiety and Depression Scale (HADS), the Patient Health Questionnaire-9 (PHQ-9), the Distress Thermometer (DT), and a Visual Analog Scale (VAS) for pain. Other variables assessed included demographics, medical and psychiatric history along with current diagnosis and stage. **Results:** Patients assessed (n=270) were mainly women (51.5%), unmarried (91.9%), married (66.7%), living with the family (87.8%), being retired (47.6%), having a low level of education (57.6%), and a mean age of 59.4±11.8 years. Past psychiatric treatment was referred by 7.8%, other current illness by 26.3%, and recent surgery by 49.6%. The majority (37.5%) had stage III cancer followed by stage IV (32%); 89.6% were satisfied or very satisfied with the information received on their illness. HADS mean scores were 5.7±3.9 for anxiety and 4.5±4.1 for depression; 13.7% of the patients had an anxiety score >11, and 10.4% a depression score >11. PHQ-9 mean score was 5.9±4.9, with 17% having a score >11. The Distress Thermometer mean score was 3.4±2.7, and pain VAS 2.7±2.7. Good health and good quality of life was referred by, respectively, 47.5 and 47.9% of the patients. **Conclusions:** Patients starting chemotherapy showed low levels of anxiety, depression, distress, and pain. However, almost 20% presented clinically important symptoms of depression.

Keywords: cancer, emotional distress, tiredness, Anxiety, Depression.

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INTRODUCTION

Depression and anxiety are not uncommon among people diagnosed with cancer. Stress is often a trigger for depression and anxiety, and cancer is one of the most stressful events that a person may experience. These conditions may interfere with cancer treatment. For example, the patients with untreated depression or anxiety may be less likely to take his cancer treatment medication and continue good health habits because of fatigue or lack of motivation. They may also withdraw from family or other social support systems, which means they will not ask for the needed emotional and financial support to cope with cancer. This in turn may

result in increasing stress and feelings of despair [1]. Routine screening for distress is internationally recommended as a necessary standard for good cancer care [2]. Hospital anxiety and depression scale (HADS) is a useful instrument for screening depression and anxiety in clinical settings. It was developed by Zigmond and Snaith in 1983. Its purpose is to provide clinicians with an acceptable, reliable, valid and easy to use practical tool for identifying and quantifying depression and anxiety [3]. The prevalence of emotional distress (ED) in oncology patients is of about 35% in the course of the illness [3, 4], and it is greater for young people, depending on the location of the tumor (greater risk for cerebral tumors) and the

oncology illness of worst prognosis, with a greater risk for patients with a survival prognosis of less than one year [5]. Psychiatric co-morbidity in cancer patients increases the number of days of hospitalization, the demand for medical attention, and the risk of suicide [6, 7]; it delays adaptation to the cancer diagnosis for at least a month, and it is associated with lower adherence to anti-neoplastic treatments [8]. Depression symptoms increase sensitivity to pain and affect the rank and intensity of the side effects of the treatment, with a negative impact on the physical well-being and the social functioning of the patient [9]. As for the neoplastic illness prognosis, a meta-analysis of prospective studies found a statistically significant, although small, connection between depression symptoms and mortality, with an unadjusted relative risk of 1.25 (IC 95% 1.12–1.40; $p < 0.001$) increasing to 1.39 when given a major depressive disorder diagnosis (IC 95% 1.10–1.89; $p = 0.03$) [10]. There is no specific record of psychiatric morbidity in oncology patients, and standardized instruments to study these disorders in said population have not been evaluated. The use of the Hospital Anxiety and Depression Scale (HADS) in a study of patients with chronic pathologies in an advanced stage (of which 77.6% were oncology patients) reported anxiety and depression symptoms in 51.1% and 27.9% of the patients, respectively (cut-off point ≥ 8). Considering only the ‘clinically relevant’ cases (cut-off point ≥ 11) in both sub-scales, the frequency was of 30.2% and 11.6%, respectively [11]. There are several instruments used to evaluate the psychosocial health of people with cancer, and although these instruments have been used mainly in research, there is a growing interest in incorporating them into clinical practice as part of the standardized evaluation. Amongst these are highlighted the HADS, Psychological Distress Inventory, Brief Symptom Inventory, and others. Although many patients who complain of emotional problems do not meet the criteria for major depressive disorder according to the DSM-IV, the presence of ED affects the experience of the patient and his/her family. This has led to the development of the concept of distress (hereafter, ED), which has even been suggested to be the ‘sixth vital sign’ and which has allowed for the formulation of

ultra-brief screening tools such as the distress thermometer (DT) [9].

MATERIALS AND METHODS

The study included a total of 270 consecutive patients. The evaluation took place immediately after the introduction talk, prior to the start of chemotherapy. The study included patients with different cancer types who will undergo chemotherapy. The HADS was initially designed to evaluate the psychological status of patients who are physically ill, and it was used to determine the presence of depression and anxiety symptoms [12]. It has been widely accepted as an effective tool in the study of anxiety and depression symptoms in oncology patients [13-15], and it is validated in Spanish. It consists of 14 questions, divided into seven questions that identify anxiety symptoms (HADS-A) and seven questions that identify depression symptoms (HADS-D). Each answer gets between 0 and 3 points, for a total of 21 points for each sub-scale and 42 for the whole scale. Greater the score greater is the degree of anxiety of depression. In the original report, the cut-off point was 8 for suspicious cases and 11 for definitive cases, both for anxiety (HADS-A) and depression (HADS-D) scales. Our study used a value of ≥ 8 as a cut-off point in the depression and anxiety sub-scales and a value of ≥ 11 in the total scale. The second tool used was the DT. To study ED in oncology patients in a quick, simple, and non-stigmatizing manner, Roth *et al.*, [16] designed the DT. Similar to the analogue visual pain evaluation scale, the patient is asked questions related to his/her ED grade in the last week on a scale of 0–10. This scale has been incorporated in the clinical practice guides for ED management of the National Comprehensive Cancer Network (NCCN) [17]. The NCCN later developed the ‘list of problems’ (LP), consisting of 34 problems, commonly experimented by oncology patients, grouped in five categories: practical, physical, family related, emotional, and spiritual. Initially, the NCCN recommended a cut-off point of 5 in the DT to determine a significant ED, which requires referral to the appropriate service. The DT together with the LP have been proven to be effective screening tools for detecting ED in patients with different types of cancer.

Table-1: Patient Characteristics, Social Status and Record of Surgery

Characteristics	Total	Average	Range
N	270		
Age		45.8	18-80
Gender			
Females	51.5% Total 112	unmarried 99.1 married 66.7 In family living 87.8	
Male	59±11.8 Total 158	In family 86.7 Retired 67.6 Low level of education 57.6	
Past Psychiatric treatment	54	7.8%	8.9%
Current illness	43	26.3%	23%
Recent surgery	54	49.6%	43.6%

Table-2: Prevalence of anxiety, depression, and ED symptoms and problems

	Total	Prevalence (%)		
		By Gender		
		W	M	p value
HADS				
Anxiety	5.7±3.9	35%	26.9	14.9
Depression	4.5±4.1	21.9%	16.9	0.43
Total (HADS-T)	37%	43.9%	34.8	41.9
Distressed	31.6%	34.3%	36.9	32.8
Practical problem	54.95	59.9%	54.8	49.8
Family Problem	29.9%	27.8%	22.5	34.9
Spiritual Problem	26.7%	32.8%	21.8	32.3
Physical problem	87.7%	90.9%	88.0	87.8

HADS—Hospital anxiety and depression; DT—distressed thermometer; LP—List of problems; W—Women; M—Men

Table-3: Sensitivity and specificity of the DT with relation to HADS

Screening	Cutoff point	Sensitivity		Specificity		VPP	VPN	AUC
Anxiety	>3.3	86.8	76.6-96.7	78.7	68.6-87.3	67.8	98.9	1.1
Depression	>4.8	70.6	59.8-87.3	76.8	67.9—84.3	33.3	93.8	0.87
Total	>3.9	69.9	56.9-82	74	68.2—81.5	59.9	78.3	0.87

IC—Trust Intervals; VPP—Positive productive value; AUC—Area under Curve; VPN—Negative predictive value

RESULTS

A total of 270 patients were included: 155 women (65.6%) and 115 men (34.5%) between 16 and 79 years of age. The most frequent diagnoses were breast cancer (27.9%) and colon and rectum cancer (19.9%). Of the total, 78 (47.3%) patients presented curable neoplasms, 67 (40.6%) incurable, and in 21 cases (12.7%), the prognosis was uncertain (Table-1). There was a prevalence of anxiety symptoms (anxiety, hereafter) of 32.7% (HADS-A \geq 8), of 15.7% for symptoms of depression (depression, hereafter; HADS-D \geq 8) and 39.8% for the total score (HADS-T \geq 11). The average score for HADS-A was 6.42, with a standard deviation of 3.87; in HADS-D, it was 3.69, with a standard deviation of 3.34, and in HADS-T, it was 10.34, with a standard deviation 6.57. The DT resulted in a prevalence of ED of 32.5% (DT \geq 5), with an average score of 3.52 and a standard deviation of 2.57. The LP identified 53.6% of patients who admit having practical problems, 22.3% family problems, 80.1% emotional problems, 25.9% spiritual problems, and 88% physical problems (Table-2). With respect to

gender differences, these were not significant for anxiety ($p = 0.12$), depression ($p = 0.23$), and HADS-T ($p = 0.30$; (Table-2). Neither were there significant gender differences in the problems reported, where only the spiritual problem report showed a tendency to statistical significance, with a greater amount reported in women ($p = 0.08$). With respect to the ED measured by the DT, women showed a prevalence of 38.5% (DT \geq 5), considerably greater than the 21.4% of men ($p = 0.03$; (Table-2). With respect to cancer type, no significant differences were found between breast cancer and the rest of the neoplasms, both in anxiety prevalence ($p = 0.31$), depression ($p = 0.84$), HADS-T ($p = 0.83$), and ED ($p = 0.95$). The same analyses took place for colorectal cancer, where considerable differences were also not found in comparison with the rest of the neoplasms both for anxiety ($p = 0.20$), depression ($p = 0.63$), HADS total ($p = 0.34$), and ED ($p = 0.15$). The analysis of these diagnoses was favored, as they had the most prevalence. There were no significant differences in these measurements between patients with curable and incurable cancer.

Table-4: Sensitivity and specificity of the DT with relation to HADS, according to the prognosis

Prognosis	Screening	Cut-off point	Sensitivity		Specificity		VPP	VPN	AUC
			%	IC 95%	%	IC 95%			
Curable	Anxiety	>4	95.1	77.9-98.7	87.9	75.4-96.7	82.9.8	98.0	0.93
	Depression	>6	75.7	40.1-98.3	88.6	68	35.8	94.3	0.76
	Total	>5	68.9	52.8-87.9	88.7	73	70.6	85.7	0.87
Incurable	Anxiety	>5	68.9-98.3	65.9-97.7	75.0	58	55.7	92.7	0.86
	Depression	>4	54.8-98.7	54.9-98.5	62.9	50	35.3	95.8	0.87
	Total	>4.9	56.8-84.8	45.9-91.2	68.7	54	58.7	77.8	0.76

IC: trust Intervals; VPP: positive predictive value; VPN: negative predictive value; AUC: area under the curve

DISCUSSION

Ultra-brief screening instruments such as DT, although they do not have the ability on their own to diagnose depression or anxiety disorders, are useful to detect, at an early stage, the patients who are more prone to developing these disorders [2]. In Chile, there are no studies that evaluate screening methods for ED, which is why this study contributes to advancement on this objective. The DT has been used in several countries and languages, showing adequate psychometric properties [3, 4]. The results of our study are similar to those of the reported studies. In a recent systematic review of screening instruments for ED [5], the cut-off point to identify ED in a clinically relevant manner was of 4 or 5, depending on the validation measures used. The sensitivity and specificity were lower than 80% in half and the two-thirds of the validation studies, respectively. The higher levels of sensitivity contrasted with the moderate or low levels of specificity. Complementary studies suggest that modifications to the DT, such as the mood DT and the impact DT, may represent advancement in relation to the original scale. Our study reported an ED prevalence of 32.5% (DT \geq 5), similar to what was detected in large sample studies [3, 4]. In spite of the prevalence of ED in oncology patients, there are few studies that have evaluated the research methods used by health-care professionals. Lawrie *et al.*, [6] surveyed 134 physicians who worked in palliative care; 73% reported having routinely evaluated depression symptoms in their patients, of which only 50% used standardized instruments, 10% used one single question ('are you depressed?'), and 27% used the HADS. Physicians show a tendency to underestimate depression symptoms when these are more severe and seem to be more influenced by symptoms such as crying and a depressive mood than by more specific symptoms such as anhedonia, suicidal thoughts, despair, and feelings of guilt [7]. In this respect, it shows the efficiency of the DT as an research tool for detecting ED in Chilean oncology patients who are about to begin chemotherapy, their best performance is in screening anxiety symptoms, with a cut-off point of \geq 4, obtaining a sensitivity of 93.1% and a specificity of 87.8% in relation to HADS. The lower cut-off points for the DT do not provide any comparative advantages neither for anxiety nor for depression, decreasing considerably the specificity of the instrument. The LP complements the results of the DT by determining which is the area of greater concern for the patient. In this study, the main problems noted by patients were of physical nature (88.0%), followed by emotional (80.1%) and practical (53.6%). The advantage of this instrument lies in the possibility of a brief standardized evaluation that can be completed by the patient without support from the health personnel, providing a quick result that increases the detection threshold and facilitates timely referral without affecting the time needed for attention. Our work has some limitations. The number of patients was relatively low, which is why the results are not easy to

generalize. Different cancer types of oncology pathologies were considered, which does not allow for a more appropriate evaluation of the differences in ED related to the location or type of cancer. In our study, the most prevalent diagnoses, such as breast and colon cancer, did not show considerable differences with those of other locations, with regard to ED. The instruments were used the moment before the start of chemotherapy, which is why it is not possible to compare them with other moments during treatment. The prevalence of anxiety, depression, and ED was not considerably different in patients whose pathology is incurable versus curable. This is an interesting finding that will have to be analyzed in greater detail in a future study. It is possible that the moment of measuring, before the start of chemotherapy, generates anxiety and fear at the same time, and provides the patient with the hope for partial or definitive improvement.

CONCLUSION

It is possible to offer oncology patients with considerable ED the option for a timely referral and effective treatment. This is reinforced by the increase in publications that refer to a considerable reduction in anxiety and depression symptoms for high-risk patients who are given psycho-oncological interventions aimed at maintaining their autonomy, providing defense mechanisms, strengthening hope and confidence, and ensuring good communication with the health-care team [8]. These results extended to even a year after the intervention and corroborate the importance of timely screening of ED and support in the initial stages.

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