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Research Article

Association of Mental Health with Clinical and Demographic Determinants among Cancer Patients in Greece

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Abstract

Cancer is a chronic disease that may occur in different periods of a person's life. The aim of this study is to investigate the existence of depression and anxiety in patients with colorectal cancer as well as the factors that affect these variables (depression and anxiety). The HADS scale for mental health assessment was used to collect the research data. The study involved 100 patients (58 men and 42 women) with an average age of 63.72 ± 9.84 years of life. In the context of the correlations between the variables, the results showed that there is a negative correlation between sample age and anxiety ($r = -0.227$, $p = 0.024$) as well as the total score of the HADS questionnaire ($r = -0.238$, $p = 0.019$).Both depression and anxiety of these patients are affected by different sociodemographic and clinical factors.

Keywords: colorectal cancer; depression; anxiety; mental health; clinical and demographic determinants; patients; Greece

Introduction

The cancer sufferer experiences a multitude of negative and painful symptoms, where many systems of the person are disturbed. The relevant symptoms are found on an organic, emotional, social, psychological, existential and individual level. The main symptoms that burden patients with neoplasms are pain, fatigue, physical problems, discomfort, weakness, agony, uncertainty, frustration, fear of abandonment, fear of recurrence, sexual dysfunction, disorders sleep and cachexia in general. Gastrointestinal disturbances, such as nausea and vomiting, are sometimes present. Additionally, chemotherapy contributes to the patient's rapid hair loss. The resulting alopecia is another strong psychological blow for the cancer patient, resulting in a negative change in his self-image (low self-esteem) [1].

All these are factors that are blamed for the appearance of anxiety in oncology patients [1]. Therefore, these patients have to deal with a multitude of issues, such as management of pain and other psychosomatic symptoms, negative emotional, psychosocial and psychological effects, management of death and impending relapse anxiety, treatment adherence, management of symptoms from arduous and long-term treatment, abandonment anxiety by significant others, psychological effects of family and caregivers, conflict management, etc. [1].

Four studies focusing on cancer in general observed that anxiety was prevalent in 13–48% of patients [2,3]. Skarstein et al., [2] also studied stress among different types of cancer together. They found that 13% of the 568 patients experienced anxiety. Skarstein et al., [2] also combined anxiety and depression, with 17% of patients suffering from both. Stark et al., [3] observed anxiety in patients with renal cell carcinoma (N = 54), HL (N = 21), multiple myeloma (N = 6), malignant melanoma (N = 41). Of the 178 patients, 48% reported anxiety. Anxiety disorder was reported by 17.9% of patients. They also noted that 8.9% reported Panic Disorder, 13.5% reported a phobia, and 8.4% reported Generalized Anxiety Disorder.

Comparing outcomes across cancer types, it was observed that when controlling for age and other variables, patients with lymphoma were more likely to develop anxiety than patients with malignant melanoma [3]. Two studies noted that anxiety was prevalent in 14.5–15% of HL survivors [4]. Both studies had a cross-sectional design, were conducted in Norway, and used the HADS to assess anxiety [4].Loge et al. [4] observed a significant difference in their study in relation to the level of worry by level of education, namely a higher level of worry was observed among the less educated.

Depression often accompanies various physical diseases, especially chronic ones, which cause a serious mental burden.There are certain factors related to the occurrence of depression in cancer [5]:

- Pain/feeling helpless
- Increased anxiety
- Impulsive behaviors associated with alcohol abuse, organic psychosis and psychosis

• Dysfunctional family relationships

• The feeling that the patient may have that he is dependent on third parties

• Serious family problems

• Personality disorder

• Serious psychological trauma in the past

• Previous history of depression and suicide attempt

• Positive family history of suicide

Social factors include the following [5]:

• Limited support from home

• Low social support

• Strongly dependent relationships

• Serious family disputes

• Intense concern of the sufferer for the family and children

• Serious spiritual and mental crisis

Identifying these psychological and social factors and consequently identifying patients at increased risk of depression is the first step for a proper therapeutic approach.

Several studies suggest that depression and organic psychosis are the most common diagnoses of cancer patients with suicidal ideation or those who have attempted suicide. In particular, organic psychosis is the most frequent psychiatric disorder in end-stage patients, and covert suicidal ideation in these patients often belongs to the context of mood disorders.

Suicidal ideation usually occurs in the context of a psychiatric disorder, and a careful assessment and intervention is effective in dealing with suicidal intent in these patients. With timely psychiatric intervention, the risk of suicide can be reduced even in end-stage patients [5]. Two studies that assessed depression among cancer patients found a combined rate of depression and anxiety of 17% [2]. Skarstein et al., [2] conducted a study among 568 cancer patients. They found that 17% experienced mental distress (either depression, anxiety, or both).Skarstein et al., [2] also separated this rate into anxiety, depression, or both. Two studies that focused on depression in HL survivors found that the prevalence of depression ranged from 3% to 4% [4]. Both studies used Zigmond and Snaith's [6] HADS. Loge et al., [4] also observed differences in the level of depression in relation to the level of education, namely a higher level of depression among the less educated. They also studied the relationship between depression and age, stage of disease and time since diagnosis. The highest levels of depression were found among those 7–10 years after diagnosis, among patients (aged 60–74 years), and among patients with stage IB/IIB disease [4]. Finally, in an article that studied depression among patients with lymphoma and leukemia (Montgomery et al., 2003) it was observed that 51% of patients experienced distress and mild to moderate depression. Almost 14% of patients had anxiety about the future and major depression [7].

The aimof this study is to investigate the existence of depression and anxiety in patients with colorectal cancer as well as the factors (clinical and demographic) that affect these variables (depression and anxiety).

Method

Questionnaires

In this research, the following tools were used to collect the data: 1. The HADS scale for assessing mental health (depression and anxiety), which consists of 14 questions that assess how respondents felt during the previous week. Seven of the 14 questions assess the level of depression and the remaining 7 assess the respondents' level of anxiety. The total score of each subscale ranges from 0−21.Higher values indicate higher levels of anxiety and depression, respectively. The HADS scale, which has been widely used in the literature, follows the following categorization: A score of 0−7 indicates no anxiety or depression, a score of 8−10 indicates moderate levels of anxiety or depression, and a score >11 indicate high levels of anxiety or depression [6]. The HADS scale has been translated into Greek and tested for validity and reliability in end-stage cancer patients by Mystakidou et al. [8] in 2004. Also, satisfactory reliability and validity results of the specific scale were also found by Michopoulos et al., [9] when the scale was applied to patients of pathology and surgery departments.In addition to the questionnaire, there were questions related to demographic and clinical characteristics, e.g.gender, age, disease diagnosis, height, weight, etc.

Sample

This is a cross-sectional study.The data collection took place in general hospitals located in the broader area of Athens over a period of approximately 4 months.A convenience sample was collected and specifically, 100 patients (42 men and 58 women) participated in the study. Patients were selected based on the inclusion criteria for the study, which are as follows:

• The patient's consent

• Age over eighteen years

• Diagnosed with Type 2 Diabetes Mellitus and colon cancer

• Ability to communicate in the Greek language

• His (patient's) general state of health allows him to take part in the study

All research participants were informed in writing and verbally and signed a consent form. The collection of the sample was preceded by written approval from the Scientific Committees of the Hospitals, following a relevant request of the researcher.

Data collection process

The data was collected with the help of special questionnaires. The researcher was responsible for the data collection, informed the patients orally about the aims of the study and then completed the questionnaires by interview, which were accompanied by a letter stating information about the purpose of the study, anonymity and data confidentiality, as well as the voluntary nature of participation. Completing the questionnaires meant acceptance of participation and informed consent, while their completion time did not exceed 10 minutes. Permission to conduct the study was obtained from the Hospitals' Scientific Council. The response rate was 100%.

Statistical analysis

For the presentation of the results related to the responses of the patients to the questionnaires, who participated in the research, a frequency analysis was carried out.Additionally, the descriptives command was run to examine the averages.Quantitative variables are presented as mean (± standard deviation) while qualitative variables are presented as frequency (%).Also, a test of normality of the sample was performed using the Kolmogorov Smirnov test.In order to investigate possible correlations between depression, anxiety and socio-demographic and clinical factors, non-parametric tests were performed (Spearman correlation analysis, Mann-Whitney test, Kruskal Wallis test). Statistical analysis was performed with the IBM SPSS Statistics 23 statistical program. A p value <0.05 was considered to indicate statistical significance.

Results

One hundred patients (42 men and 58 women) with an average age of 63.72±9.84 years participated in the research. The majority of them were married (67.0%), 24.0% widowed, 3.0% single while 6.0% were divorced. Seventy-one patients stated that they do not live alone and 20 patients stated that they do live alone. With regard to their educational level, 8 patients (8%) were elementary school graduates, 31 patients (31%) were high school graduates, 31 patients (31%) stated that they were high school graduates, while 27 (27%) had higher education degree. Only 2 patients (2%) had postgraduate degrees. Regarding the professional status of the patients, the majority (58 patients) stated that they are retired, 7 private employees, 12 public employees, 7 patients were engaged in household chores and 11 also stated that they were self-employed. The

majority of patients lived in an urban area (66.0%), 15 patients (15.0%) in a rural area and 18 patients (18.0%) in a semi-urban area. Regarding the insurance status of the sample, 87 patients (87.0%) had public insurance, 6 patients (6.0%) had private insurance, while 7 patients (7.0%) declared themselves uninsured.

n	**97**	
Gender		
(Male)n (%)	42	42,0
(Female)n (%)	58	58,0
Education		
Primary school n (%)	8	8,0
High School n (%)	31	31,0
Lyceum n (%)	31	31,0
University n (%)	27	27,0
Master n (%)	2	2,0
Marital status		
Single n (%)	3	3,0
Married n (%)	67	67,0
Divorced n (%)	6	6,0
Widowed n (%)	24	24,0
Living		
Alone n (%)	20	20,0
Not alone n (%)	71	71,0
Place of residence		
Urban n (%)	66	66,0
Semi-urban n (%)	18	18,0
Rural n (%)	15	15,0
Insurance		
Not having insurance n (%)	7	7,0
Publicn (%)	87	87,0
Private n (%)	6	6,0
Profession		
Unemployed n (%)	2	2,0
Housewife n (%)	7	7,0
Public servant n (%)	12	12,0
Private employee n (%)	7	7,0
Freelancer n (%)	11	11,0
Pensioner n (%)	58	58,0
Othern (%)	1	1,0

Table 1: Sociodemographic characteristics of the study patients

	N	**Lower value**	**Higher value**	**Mean**	**SD**
Weight	97	45,00	123,00	69,2381	17,29020
Height	97	155,00	187,00	172,2374	7,79180

Table 2: Descriptive data of clinical factors

In the table above, the clinical characteristics of the sample are presented in detail. The average weight and height were 69.23 kg and 172 cm respectively.

Smoking	n	%
Yesn (%)	26	26,0
Non (%)	73	73,0
Alcohol		
Yesn (%)	10	10,0
Non (%)	88	88,0
Newly diagnosed		
Yesn (%)	7	7,0
Non (%)	42	42,0

Table 3: Descriptive data of clinical factors

Based on the results presented in table 3, 26 patients (26%) reported smoking while 73 patients (73%) reported not smoking. Ten patients (10%) answered that they use alcohol while 88 patients (88%) stated that they do not drink alcohol. Seven patients (7%) stated that they were newly diagnosed as opposed to 42 patients (42%) who answered that they were not.

		n	%
	0-7 No depression	1	1,0
	8-10 Moderate depression	41	41,0
	>10 High depression	55	55,0
	Total	97	97,0
Missing values		3	3,0
Total		100	100,0
		n	%
	0-7 No anxiety	25	25,0
	8-10 Moderate anxiety	31	31,0
	>10 High anxiety	43	43,0
	Total	99	99,0
Missing values		1	1,0
Total		100	100,0

Table 4: Levels of anxiety and depression

Based on the results presented in table 4, 1 patient (1.0%) showed no depression, 41 patients (41.0%) moderate depression and 55 patients (55.0%) high depression. The mean value of the depression level reached 10.73±1.61. Regarding anxiety, 25 patients (25.0%) showed no anxiety, 31 patients (31.0) moderate anxiety and 43 patients (43.0%) high anxiety. The mean value of the stress level reached 9.81±2.58.

In the context of the correlations between the variables, the results showed that there is a negative correlation between the age of the sample and anxiety (r= -0.227, p=0.024) as well as the total score of the HADS questionnaire (r= -0.238, p=0.019). Additionally, a positive correlation was observed between weight and depression (r= 0.237, p=0.021).

	Smoking	n	Mean	p-value
HADS Anxiety	Yes	26	59,90	0,028
	No	72	45,74	
	Total	98		
HADS Depression	Yes	26	43,08	0,235
	No	70	50,51	
	Total	96		
HADS Total	Yes	26	54,73	0,179
	No	70	46,19	
	Total	96		

Table 5: Differences between smokers and non-smokers regarding depression and anxiety

Based on the results in table 5, there was a statistically significant difference in the dimension of stress ($p<0.05$), except for those related to depression and the total score of the questionnaire, with those who are smokers showing a higher score in the level of stress compared to non-smokers.

	Education	n	Mean	p-value
HADS Anxiety	Primary school	8	44,50	0,011
	High school	30	39,15	
	Lyceum	31	50,02	
	University	27	63,87	

	Master	2	22,75	
	Total	98		
HADS Depression	Primary School	8	56,88	0,677
	High School	29	50,24	
	Lyceum	30	46,78	
	University	27	44,76	
	Master	2	66,00	
	Total	96		
HADS Total	Primary school	8	51,94	0,112
	High school	29	39,93	
	Lyceum	30	47,73	
	University	27	58,83	
	Master	2	31,00	
	Total	96		

Table 6: Differences between educational levels regarding depression and anxiety

Based on the results of table 6, a statistically significant difference was noted between different educational levels in terms of the stress dimension ($p<0.05$), except for those related to depression and the total score of the questionnaire, with high school and senior high school graduates education to display the highest scores.

	Insurance	n	Mean	p-value
HADS Anxiety	Not having insurance	7	48,50	0,556
	Public	87	50,88	
	Private	5	36,80	
	Total	99		
HADS Depression	Not having insurance	7	31,43	0,028
	Public	85	51,79	
	Private	5	26,20	
	Total	97		
HADS Total	Not having insurance	7	41,14	0,102
	Public	85	51,04	
	Private	5	25,40	
	Total	97		

Table 7: Differences between insurance status regarding depression and anxiety

Based on the results in table 7, there was a statistically significant difference on the depression dimension ($p<0.05$) with those who have public insurance or are uninsured showing higher scores.

Finally, there were no statistically significant differences ($p>0.05$) regarding the remaining socio-demographic variables (family and professional status).

Discussion

The findings from the current study are significant and can be summarized as follows: In the context of correlations between the variables, the findings indicated that there is a negative correlation between the age of the sample and anxiety as well as the total score of the HADS questionnaire. Additionally, a positive correlation was observed between weight and depression.

These findings are in full agreement with those of other similar studies regarding chronic diseases. Specifically, research has shown that the behavior of the diabetic person regarding his disease depends on a number of demographic, anthropometric and socio-economic factors, such as age, gender, marital status, co-existing diseases, obesity, education, unemployment and the duration of the disease [10,11].

Regarding the limitations of the present research, it is noted that the results obtained from this study cannot be generalized because they come from a restricted number of hospitals in the broader area of Athens. They should be further investigated in larger samples and from other private or

even public hospitals, giving the possibility to control the variables under study, to compare the results, so that more general conclusions can be drawn.

Assessing the relative impact of chronic diseases on mental health is essential for better planning and allocation of research, training, and health care resources to further promote the well-being of chronically ill people. Consequently, collaboration between different sciences could produce better therapeutic outcomes for people suffering from chronic conditions, especially those most in need.

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