

Evaluation of Anxiety and Depressive Symptoms in a Sample of Adult Patients with Cancer at Al-Furat Cancer Hospital/Najaf

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Abstract

Background: Cancer patients' mental well-being negatively impact on treatment tolerance, reduces the effectiveness of chemotherapy, prolong hospitalization, increase healthcare cost, would lower life expectancy, and poor quality of life. **Objectives:** The objectives are to evaluate the rate of anxiety and depressive symptoms across adult cancer patients and to find its association with some sociodemographic factors. **Materials and Methods:** A cross-sectional study was carried out in Al-Furat Cancer Hospital in Najaf/Iraq, from April 10 to July 10, 2022. All convenient patients who were admitted to the hospital during the study period were included. The data were collected by interviewing the patient using semiconstructed questionnaire, and Hospital Anxiety and Depression Scale was used. Chi-square and independent *t* tests were used. **Results:** Among a total of 470 patients, the mean age was 54.1 ± 14.2 years, 284 (60.4%) were female, and 364 (77.4%) were married. About 183 (38.9%) patients had anxiety disorder, and there was a significant association among gender, marital state, occupation, presence of pain, and having gynecological cancers with anxiety. Around 163 (34.7%) of patients had depressive symptoms. The study showed a significant association among gender, occupation, low income, and the presence of a positive family history of cancer, metastasis, and pain with depression. **Conclusions:** More than one-third of the sample suffered from anxiety and depression; females more than males. There was a significant association between anxiety/depression and gender, occupation, and presence of pain.

Keywords: Anxiety, cancer patients, depression, HADS, psychological disorders

INTRODUCTION

Cancer is one of the main causes of mortality globally, it represents a burden on any society and across the whole globe. In 2018, there were 18.1 million new cancer cases diagnosed and 9.5 million cancer-related deaths worldwide. In 2020, it escalated to 19.3 million newly diagnosed cases, and it is estimated that by 2040, the number of new cancer cases per year would reach up to 30.2 million, and there have been over 16.4 million mortalities linked directly to cancer.^[1,2]

Anxiety, it is a feeling of unease; a feeling that is manifested as tense sensations, fearful thoughts, and somatic changes including elevated blood pressure. Often, dark thoughts or worries repeat throughout the lives of those with anxiety. They could also exhibit physical signs including shaking, sweating, disorientation, or an elevated heart rate.^[3]

Depression, though it is a common illness worldwide, is different from usual mood fluctuations and short-lived

emotional responses to challenges in everyday life. Especially when recurrent and with an intensity range from medium or high severity. Depression has the potential to develop into a significant medical illness for healthy people, and it definitely causes the affected individual to experience severe suffering and perform poorly in job, at school, and in home. Depression can, in the worst cases, result in suicide.^[4]

Research about cancer care in low-medium income countries identified gaps in the system including the psychological services.^[5] Additional research suggested a wide range of characteristics, including poor income,

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lesser education, female sex, handicap status, and single marital status, to be connected with profound mental health issues in patients with cancer diseases. Mental health problem consequences in patients are significantly correlated with low physical well-being, including chronic medical issues, pain, and impairment.^[2]

In Iraq, there are very limited published articles regarding psychological evaluation in terms of anxiety and depression in cancer patients. A study conducted on 50 cancer patients of both sexes who were admitted to Radiation and Nuclear Medicine Hospital in Baghdad he reviewed the Hospital Anxiety and Depression Scale (HADS), and the study showed that cancer patients had a significant level of depression, which was not related to chemotherapy side effect but may be due to the disease itself.^[6]

Objectives of study

The objectives of the study are to evaluate the rate of anxiety and depressive symptoms across adult cancer patients and to find an association in some sociodemographic factors with anxiety and depression occurrence.

MATERIALS AND METHODS

Study setting and period of study

The study was conducted at Al-Furat Cancer Hospital in Najaf/Iraq, from April 10 to July 10, 2022. Data were collected for 5 days per working week from the hospital which represents the major oncology-dedicated hospital serving a wide catchment area in the middle Euphrates zone, and it provides not only diagnostic but also therapeutic and palliative services (from Sunday to Thursday, from 9:00 AM to 12:00 PM).

Study design and sampling technique

A cross-sectional study was adopted. All convenient patients, who attended the hospital in that period and accepted to participate, were included in the study. Around 7–8 participants were interviewed daily. Each participant required a period of 15–20 min to complete the interview and the HADS questionnaire. Data collection lasted for 3 months.

Study population

All cancer adult patients were admitted to the hospital in the period of the data collection who fill the inclusion criteria.

Inclusion criteria are as follows: all patients aged 18 and older with cancer and accept to be part of this study.

Exclusion criteria are as follows: all patients diagnosed with mental disorder and/or currently on antipsychotic treatment.

Tools of the study

The data were collected by interviewing the patient using semiconstructed questionnaire and use of HADS.^[7–10]

The HADS was developed by Zigmond and Snaith^[11] to avoid relying on elements of these disorders that are often frequent somatic manifestations of disease, such as weariness, sleeplessness, or hypersomnia.

For measurement, cutoff levels were provided. As shown in Table 1, a number of 8 or higher for anxiety has a specificity of 0.78 and a sensitivity of 0.9, and for depression, a specificity of 0.79 and a sensitivity of 0.83.^[12] So, on every assessment, participants are asked to select their answers from the four options available. They ought to be urged to respond right away and discouraged from deliberating on their responses so much for so prolonged. The questionnaire pertaining to anxiety was identified with an “A,” whereas the questions pertaining to depression were identified with a “D”. Each item on them was scored from 0 to 3, and this means that a person can score between 0 and 21 for either anxiety or depression.

The HADS questionnaire has been validated in many languages, countries, and settings including general practice and community settings. The Cronbach's alpha values demonstrating internal consistency reliability were 0.890 for the questionnaire (HADS-A) and 0.86 for the depression questionnaire built on the component correlation coefficients (HADS-D). Significant association between the HADS-A and HADS-D scores was found (r : 0.88). It is helpful for making a preliminary identification and monitoring the development (or disappearance) of mental disorders. It is among the techniques for diagnosing anxiety and depression that the National Institute for Health and Care Excellence (NICE) advises.

Ethical approval

The study was conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki. It was carried out with patients' verbal and analytical approval before the sample was taken. The study protocol and the subject information and consent form were reviewed and approved by a local ethics committee according to the document number T.B.02/03/938 on April 18, 2022, to get this approval.

RESULTS

Demographical characteristics

Among a total of 470 patients, the mean age of the studied sample was 54.1 ± 14.2 years ranging from 18 to 101 old years. Table 1 shows the demographical characteristics.

Table 1: The scores and criteria of depression and anxiety

Total score	Depression	Anxiety
0–7	Normal	Normal
≥8	Abnormal case	Abnormal case

Three hundred eight (65.5%) of the sample aged 50 years and more and 284 (60.4%) of them were females, and 364 patients (77.4%) were married. Around 192 patients (40.9%) were illiterate, and 294 (62.6%) were unemployed/housewife.

Three hundred sixty-two (77%) of the patients think their income was not enough. Regarding history of smoking,^[13] 318 (67.7%) of them were never smoked previously. And, 464 (98.7%) had never drank alcohol.

About 243 patients (51.7%) had no chronic diseases, and the remaining 227 (48.3%) had hypertension, diabetes mellitus, arthritis or asthma, etc. [Table 2].

The mean period for cancer diagnosis was 17.28 ± 26.0 months ranging from less than 30 days up to 139 months (i.e., 11.5 years).

Positive family history of malignancies was stated among 176 patients (37.4%). Metastatic cancer was reported among 111 (23.6%) of the sample. Around 215 (45.7%) of the sample stated that they have cancer pain [Table 3].

Table 2: Sociodemographic characteristics of the studied sample

Variables	Frequency	Percentage
Age (years)		
<50	162	34.5
≥50	308	65.5
Gender		
Male	186	39.6
Female	284	60.4
Marital status		
Single	48	10.2
Married	364	77.4
Widow/divorced	58	12.4
Education level		
Illiterate	192	40.9
Primary	122	26.0
Secondary	88	18.7
University/postgraduation	68	14.4
Occupation		
Housewife/unemployed	294	62.6
Employee	176	37.4
Income		
Not enough	362	77.0
Enough	108	23.0
Smoking		
Never smoking	318	67.7
Ex/currently smoking	152	32.3
Alcohol consumption		
No	464	98.7
Yes	6	1.3
Chronic diseases		
No	243	51.7
Yes	227	48.3
Total	470	100.0

Around 294 patients (62.6%) were from Al Najaf Governorate. Figure 1 illustrates the distribution of the sample by the place of residency.

Breast cancer was the main cancer, it was reported among 160 patients (34%), followed by gastrointestinal tumors in

Table 3: Cancer topography of the studied sample

Variables	Frequency	Percentage
Family history		
No	294	62.6
Yes	176	37.4
Metastasis		
No	359	76.4
Yes	111	23.6
Pain		
No	255	54.3
Yes	215	45.7
Type of cancer		
Breast	160	34
Gynecological cancers	23	5
Genitourinary (kidney, urinary bladder, prostate)	50	10.6
Gastrointestinal and liver	80	17
Hematological (leukemia, lymphoma)	63	13.4
Respiratory (lung, bronchus, etc.)	38	8
Others	56	12
Total	470	100

	Mean ± SD	Range
Disease duration "from time of diagnosis till the time of interview"	17.28 ± 26.0 months	(<1 month to 139 months)

SD: standard deviation

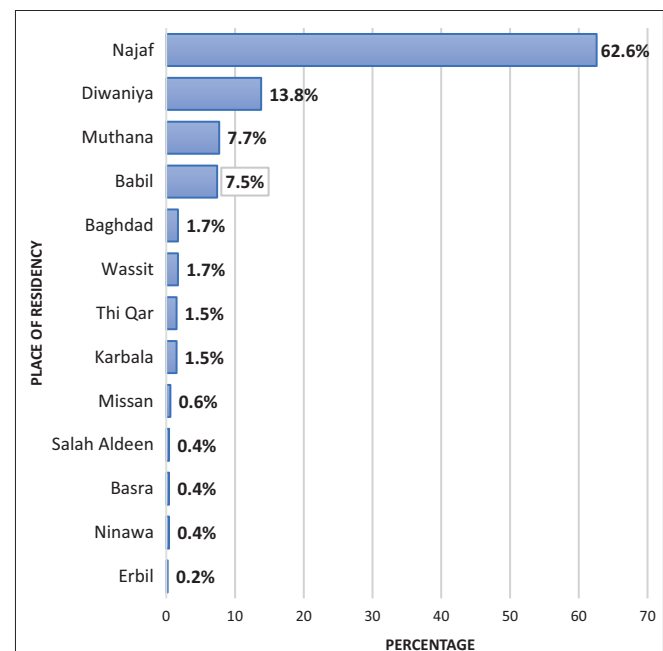


Figure 1: The distribution of the sample by the place of residency

80 patients (17%). Figure 2 demonstrates the distribution of respondents according to the type of cancer.

Anxiety

Among the patients, 183 (38.9%) of them had anxiety symptoms. Figure 3 depicts the percentage of anxiety among cancer patients.

Table 4 demonstrates the association of anxiety with sociodemographic variables.

The study showed a significant association between anxiety and being female, unmarried (single, divorced, or widow) and unemployed at P values equal to 0.001, 0.03, and 0.0001, respectively.

While there was no significant association between anxiety and age, education, income and had history of smoking, alcoholic and chronic disease.

Pain in cancer was associated significantly with anxiety ($P < 0.001$). Also, there was a considerable association

among anxiety with sites of cancer at $P = 0.0006$, whereas there was no significant association between anxiety and presence of cancer's family history, metastasis, and duration of disease. Table 5 displays the association between disease features and anxiety.

Depression

Regarding the depression rate among the samples, 163 (34.7%) of patients were depressed. Figure 4 shows the prevalence of depression among cancer patients.

Regarding the association of depression with sociodemographic variables

There was a significant association between the presence of depressive symptoms and being female, unemployed/housewife and not having enough income at P value = 0.023, 0.03, and 0.0002, respectively.

There was no association among depression with age, marital state, and education with smoking history, alcohol consumption, and chronic disease [Table 6].

Table 7 displays the association between disease features and depression. The current study showed a significant association between presence of depressive symptoms and having a positive family history for cancer (at $P = 0.009$), metastasis (at $P = 0.03$), and cancer pain (at $P = 0.000$). While there was no association between depression with types of cancer or duration of illness.

DISCUSSION

Samples' sociodemographic characteristics

According to our study done on 470 adult cancer patients, anxiety and depression can affect cancer patients at any stage of the disease and whether they are receiving curative or palliative care. In this study, anxiety and depressive symptoms were present in more than one-third of the cancer patients.

There was a significant association between anxiety and being female, (single, divorced, or widow), unemployed/housewife, presence of cancer pain, and sites of cancer. Also, significant association between the presence of depressive symptoms and being female, unemployed/housewife, income, family history of cancer, and presence of metastasis and cancer pain.

More than two-third of the patients were 50 years old and more, females, and unemployed or housewife. Most of the sample had secondary education or less, had not enough income, and never smoked or drunk alcohol previously.

Breast cancer was the main cancer reported among these samples, which represent more than one-third of them. More than one-third of the patients had family history of cancer, about a quarter reported metastasis. About half of them had history of cancer pain.

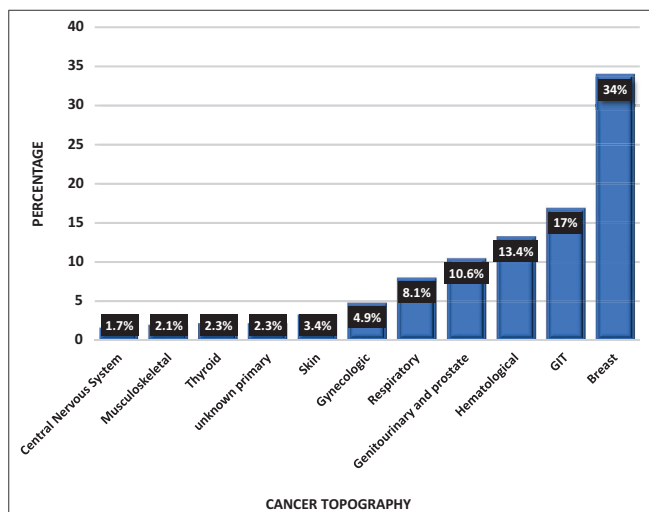


Figure 2: The distribution of respondents according to the type of cancer

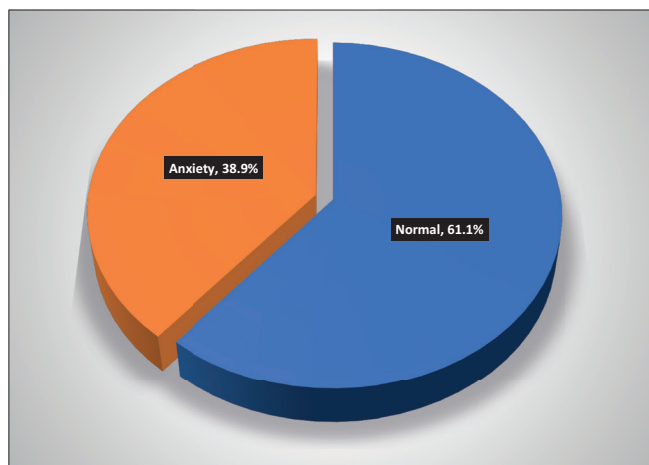


Figure 3: The rate of anxiety symptoms among cancer patients

Table 4: The association of anxiety symptoms with sociodemographic variables

Variables	Normal N = 287	Anxiety N = 183	Total	P value
Age in years				
<50	91 (56%)	71 (43.8%)	162	0.11
≥50	196 (63.6%)	112 (36.4%)	308	
Gender				
Male	140 (75.3%)	46 (24.7%)	186	<0.001
Female	147 (51.8%)	137 (48.2%)	284	
Marital status				
Married	232 (63.7%)	132 (36.3%)	364	0.03
Single/widow or divorced	55 (51.9%)	51 (48.1%)	106	
Education				
Illiterate	116 (60.4%)	76 (39.6%)	192	0.194
Primary	83 (68%)	39 (32%)	122	
Secondary	47 (53.4%)	41 (46.6%)	88	
University/postgraduation	41 (60.3%)	27 (39.7%)	68	
Occupation				
Housewife or unemployed	160 (54.4%)	134 (45.6%)	294	0.0001
Employee	127 (72.2%)	49 (27.8%)	176	
Income				
Not enough	218 (60.2%)	144 (39.8%)	362	0.50
Enough	69 (63.9%)	39 (36.1%)	108	
Smoking				
Never smoking	185 (58.2%)	133 (41.8%)	318	0.069
Ex/currently smoking	102 (67.1%)	50 (32.9%)	152	
Alcohol consumption				
No	284 (61.2%)	180 (38.8%)	464	0.6
Yes	3 (50%)	3 (50%)	6	
Chronic diseases				
No	151 (62.1%)	92 (37.9%)	243	0.64
Yes	136 (59.9%)	91 (40.1%)	227	

P-value ≤ 0.05 (5%) is considered significant and represented in bold

The age of 50 years old or older in two-thirds of the sample is in alignment with similar study by Van Herck *et al.*^[14] as roughly 50% of cancer cases occur in older people. Older people are often diagnosed at a later stage and might receive less intensive treatment. This sample revealed more females suffered from cancer than males, which agreed with the Iraqi Surveillance Department in the Ministry of Health archives from 2000 to 2016, which found cancer predominance in the female gender more than males, which agrees with data from the Iraqi cancer registrations.^[15] Also, this study showed that breast cancer is the most prevalent cancer type, which correspond with previous research done in Iraq by Alrawi^[16] and Al Obeidy,^[17] which represents the highest percentage of malignant tumors in women.

The majority of the sample were married, and almost half of the sample were illiterate, which explain by the cultural background of the patients in Najaf and its surrounding governorates, this explained the result was higher than what was reported by Alwan *et al.*,^[18] found quarter were illiterate. In the same context, the present study showed that the majority of patients were unemployed, apart can be related to cancer and the need for rest and therapy, yet

it also reflects the socioeconomic status as around 77% stated their income was not enough and most of them had low education level.

Anxiety

The current study showed that 38.9% of cancer patients had anxiety symptoms, which demonstrated the status of the adult patients with cancer. Although this considerable percentage of patients with anxiety, there is no mental health support in the hospital, early detection is essential to the care of mental health conditions and improves patients' compliance with treatment and illness treatment in general.

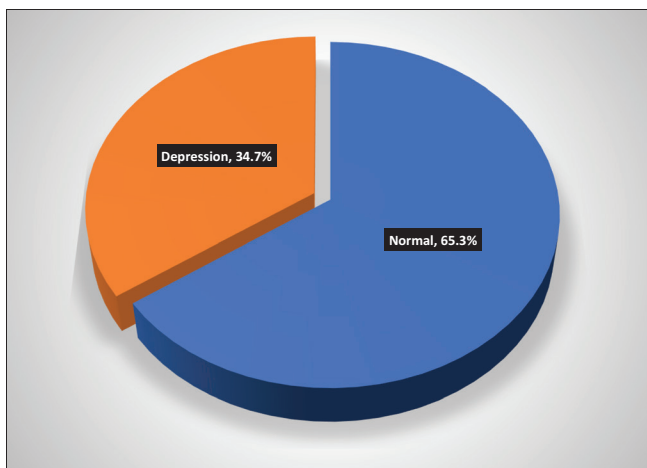
The results of similar studies by Darvishi *et al.*,^[19] Nasar *et al.*,^[20] Tsaras *et al.*,^[21] and Atinafu *et al.*^[22] reported anxiety prevalence of 40.9%, 19.9%, 32.3%, and 43.2% among cancer patients, respectively.

The current study showed a significant association between gender (females were more anxious) ($P < 0.001$), it is not a surprise after finding the most common diagnosed cancer in the hospital was female with breast cancer. It showed in similar study by Götze *et al.*^[23]

Table 5 : The association between disease features and anxiety symptoms

Variables	Normal N = 287	Anxiety N = 183	Total	P value
Family history				
No	187 (63.6%)	107 (36.4%)	294	0.17
Yes	100 (56.8%)	76 (43.2%)	176	
Metastasis				
No	225 (62.7%)	134 (37.3%)	359	0.22
Yes	62 (55.9%)	49 (44.1%)	111	
Pain				
No	185 (72.5%)	70 (27.5%)	255	0.001
Yes	102 (47.4%)	113 (52.6%)	215	
Type of cancer				
Breast	91 (56.9%)	69 (43.1%)	160	0.0006
Gynecological cancers	9 (39.1%)	14 (60.9%)	23	
Genitourinary (kidney, urinary bladder, prostate)	39 (78%)	11 (22%)	50	
Gastrointestinal and liver	51 (63.8%)	29 (36.3%)	80	
Hematological (leukemia, lymphoma)	49 (77.8%)	14 (22.2%)	63	
Respiratory (lung, bronchus, etc.)	20 (52.6%)	18 (47.4%)	38	
Others	28 (50%)	28 (50%)	56	
	Mean ± SD	Mean ± SD		
Disease duration in months	18.5 ± 27.7	15.07 ± 22.8		0.160 ^a

SD: standard deviation

^aIndependent *t* Student's test*P*-value ≤ 0.05 (5%) is considered significant and represented in bold**Figure 4:** The rate of depressive symptoms among cancer patients

Also, it found a significant association between being single/divorced or widow, housewife/unemployment with anxiety ($P = 0.03$ and 0.0001 , respectively), being alone and jobless in addition to the cancer disease itself is associated with anxiety symptoms. As one would always be anxious to support his/her treatment course, medicines cost, and in addition the daily expense of living. Additionally, the study showed that those with low educational attainment and eventually with no employment showed more anxiety symptoms. The current results were also in alignment with that reported by Ayalew *et al.*,^[24] Belay *et al.*,^[12] and Alagizy *et al.*^[25]

The current study also showed a significant association between anxiety and having cancer pain ($P < 0.001$), such that intense and long-lasting pain causes anxiety and is linked to cancer disorders. Patients with cancer who are more likely to experience anxiety and depression might get medical and mental care to manage their psychosocial issues and enhance their health result. The current finding is also aligned with similar studies published by Charalambous *et al.*^[26] and Nasik *et al.*^[27] in Turkey.

In relation to some disease's characteristics, the current study showed a significant association between anxiety and having gynecological cancers, this might be related to fertility issues, as premature ovarian insufficiency and infertility are among the most feared short- to long-term consequences of anticancer treatments in premenopausal patients.^[28]

Depression

This study found that 34.7% of adult cancer patients experienced depressive symptoms. This rate is not a good reflection of the current services offered to cancer patients, as the lack of comprehensive mental health services has an adverse effect on the prognosis of the illness and the patient's quality of life. Although the result was higher than a systematic review by Walker *et al.*^[29] that found depression up to 14% of cancer inpatients. Yet several studies reported similar levels of depression to our results among cancer patients.^[19,20,30,31]

Table 6: The association between the presence of depressive symptoms with sociodemographic variables

Variables	Normal N = 306	Depression N = 136	Total	P value
Age in years				
<50	113 (69.8%)	49 (30.2%)	162	0.14
≥50	194 (63%)	114 (37%)	308	
Gender				
Male	133 (71.5%)	53 (28.5%)	186	0.023
Female	174 (61.3%)	110 (38.7%)	284	
Marital status				
Married	242 (66.5%)	122 (33.5%)	364	0.33
Single/widow or divorced	65 (61.3%)	41 (38.7%)	106	
Education				
Illiterate	121 (63.0%)	71 (37%)	192	0.47
Primary	85 (69.7%)	37 (30.3%)	122	
Secondary	60 (68.2%)	28 (31.8%)	88	
University/postgraduation	41 (60.3%)	27 (39.7%)	68	
Occupation				
Housewife, unemployed	181 (61.6%)	113 (38.4%)	294	0.03
Employee	126 (71.6%)	50 (28.4%)	176	
Income				
Not enough	220 (60.8%)	142 (39.2%)	362	0.0002
Enough	87 (80.6%)	21 (19.4%)	108	
Smoking				
Never smoking	207 (65.1%)	111 (34.9%)	318	0.88
Ex/currently smoking	100 (65.8%)	52 (34.2%)	152	
Alcohol consumption				
No	303 (65.3%)	161 (34.7%)	464	0.94
Yes	4 (66.7%)	2 (33.3%)	6	
Chronic diseases				
No	161 (66.3%)	82 (33.7%)	243	0.66
Yes	146 (64.3%)	81 (35.7%)	227	

P-value ≤ 0.05 (5%) is considered significant and represented in bold

The current study showed a significant association between depression and females ($P = 0.023$), which explained that male individuals tended to use coping mechanisms of being outdoor while restraint significantly more frequently in women according to the cultural background of the majority of the study samples. Moreover, in women, depression correlated significantly with denial and behavioral deactivation. Similarly found by Hasan *et al.*^[32] Also, worth to mention a study by Irusen *et al.*^[33] followed prostate cancer patients and showed that men tend to be more depressed than anxious.

Being unemployed and gaining very little or no money revealed a significant connection with depression because these patients typically receive the least assistance from family members who are also struggling financially, particularly cancer patients who are usually in long treatment courses, which need huge expenses. Similarly, studies by Lu *et al.*,^[34] Ladaninejad *et al.*,^[35] Choi *et al.*,^[36] and Hartung *et al.*^[37] found the same results.

Having a positive family history of malignancy ($P = 0.009$) and having metastatic cancer ($P = 0.03$)

were significantly associated with higher depression levels. Due to the requirement to adapt to a fatal illness as cancer usually perceived as a terminal disease and if a loved one developed cancer or a setback on treatment with metastasis, this knowledge was shown to be the main cause of patients' emotions of helplessness and was strongly connected with the depression score of the sick people.^[30,38,39]

It had been reported that the risk for a cancer patient to suffer a depression after diagnoses is 15 %–20%, meaning every fifth or sixth patient gets clinical depression.^[30]

The current study reported a significant association between pain and depression ($P < 0.000$), the elderly patients usually lose their resilience to pain especially the chronic type with cancer. This result also matches that described in a systemic review by IsHak *et al.*^[40] and Charalambous *et al.*,^[27] and so several research has shown a connection between pain and depression that may increase both mental and physical conditions. These symptoms may have a negative impact on physical functionality and prolong problem persistence.

Table 7: The association between disease features and depressive symptoms

Variables	Normal <i>N</i> = 306	Depression <i>N</i> = 136	Total	<i>P</i> value
Family history				
No	205 (69.7%)	89 (30.3%)	294	0.009
Yes	102 (58%)	74 (42%)	176	
Metastasis				
No	244 (68.0%)	115 (32%)	359	0.03
Yes	63 (56.8%)	48 (43.2%)	111	
Pain				
No	194 (76.1%)	61 (23.9%)	255	0.000
Yes	113 (52.6%)	102 (47.4%)	215	
Type of cancer				
Breast	107 (66.9%)	53 (33.1%)	160	0.57
Gynecological cancers	15 (65.2%)	8 (34.8%)	23	
Genitourinary (kidney, urinary bladder, prostate)	34 (68%)	16 (32%)	50	
Gastrointestinal and liver	55 (68.8%)	25 (31.3%)	80	
Hematological (leukemia, lymphoma)	43 (68.3%)	20 (31.7%)	63	
Respiratory (lung, bronchus, etc.)	23 (60.5%)	15 (39.5%)	38	
Others	30 (53.6%)	26 (46.4%)	56	
	Mean ± SD	Mean ± SD		
Disease duration in months	18.7 ± 27.8	14.1 ± 21.9		0.065 ^a

^aIndependent *t* Student's test*P*-value ≤ 0.05 (5%) is considered significant and represented in bold

CONCLUSIONS

Our study was conducted on 470 patients at the Al-Furat Cancer Hospital in Najaf and found anxiety and depressive symptoms were present in 38.9% and 34.7% of the patients, respectively, demonstrating the strong association between these symptoms and adult cancer patients.

The study concluded that cancer patients, particularly female housewives who experience pain related to cancer illness, need mental health and psychological care.

Some characteristics of cancer diseases, most notably the pain connected to cancers, have a significant association with symptoms of anxiety and depression. Additionally, the study found a significant connection between having depressive symptoms and cancer metastasis and family history.

Regarding the type of cancers in adult patients, data showed that the breast cancer is the most common type, with gastrointestinal tract and hematological cancers coming next.

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Ethical considerations

The official approvals of the study and permissions to conduct were obtained from the institutional review board of Al-Nahrain College of Medicine. The study followed the regulation and criteria of the College of Medicine in conducting research. And, a verbal consent was taken from each participant, after the explanation of the study and its purpose, during the interview.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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