Scholars Journal of Applied Medical Sciences
Abbreviated Key Title: Sch J App Med Sci
ISSN 2347-954X (Print) | ISSN 2320-6691 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Community Medicine

Depression and Anxiety among Patients of Cancer Center of Combined Military Hospital Dhaka

Dr. Royena Tabassum[1*], Lt. Col. (Dr.) Sohel Hasan Chowdhury[2], Dr. Rebeaka Tarannum[3], Dr. Mahfuza Begum[4]

[1]Associate Professor, Department of Community Medicine, City Medical College, Gazipur, Dhaka, Bangladesh
[2]Associate Professor, Department of Psychiatry, Combined Military Hospital, Dhaka Cantonment, Dhaka, Bangladesh
[3]Consultant, Department of Gynecology & Obstetrics, Sir Salimullah Medical College & Mitford Hospital, Dhaka, Bangladesh
[4]Associate Professor, Department of Anatomy, City Medical College, Gazipur, Dhaka, Bangladesh

DOI: 10.36347/sjams.2022.v10i08.010 | **Received:** 09.06.2022 | **Accepted:** 26.07.2022 | **Published:** 13.08.2022

***Corresponding author:** Dr. Royena Tabassum
Associate Professor, Department of Community Medicine, City Medical College, Gazipur, Dhaka, Bangladesh

Abstract **Original Research Article**

Background: Cancer is a leading cause of death worldwide accounting for 7.6 million deaths (around 13% of all deaths) in 2008 and about 70% of all cancer deaths occurred in low and middle-income countries. Deaths from cancer worldwide are projected to continue to rise to over 11 million by 2030. A substantial proportion of cancer patients suffer from psychological distress. Recently the prevalence of common mental disorders among people with cancer varies widely. ***Objective:*** To describe the prevalence and risk factors of depression and anxiety among cancer patients of combined military hospital Dhaka. ***Methods:*** It was a cross-sectional study. A total of 150 samples were selected by convenient sampling technique. The patients were studied after histopathological confirmation of diagnosis of cancer. Sociodemographic and other data were collected by face-to-face interview using semi structured questionnaire. Data analysis was done by Statistical Package for Social Sciences (SPSS) version 26.0 and results were presented with appropriate graphs and texts. ***Results:*** The mean age was 46.5±9.5 years. 65.3% were male and 34.7% respondents were female. Male: female ratio 1.9:1. 40.7% patients had moderate depression symptom followed by 30.0% had mild depression symptom, 17.3% patients had severe depression symptom and 12.0% patients had minimum depression symptom that can be considered as no depression. The overall mean score of Beck Depression Inventory (BDI-II) was 22.1±8.4 with range 5 to 45. Regarding anxiety of cancer patients, 45.3% patients had moderate to severe anxiety symptom followed by 29.3% patients had mild to moderate anxiety symptom, 25.3% patients had minimum anxiety symptom that can be considered as no anxiety symptom. The overall mean score of Hamilton Anxiety Rating Scale (HAM-A) was 21.6±6.7 with range 7 to 30. In present study showed cancer stage 2 in 33.3% cases, 28.0% patients' stage 3, 21.3% patients had stage 4 and stage 1 in 17.3% cases. Significant relation was found among advance cancer stage with level of depression ($p<0.05$) and anxiety symptom. Among stage 4 patients 43.8% had severe depression symptom and 87.5% had severe anxiety symptom. ***Conclusion:*** Study shows that both depression and anxiety symptoms are significantly higher in cancer patients. Moreover, frequency and severity of depression and anxiety symptom is much more significantly raised among older age group.

Keyword: Cancer, Psychological distress, Depression, Anxiety Rating Scale (HAM-A).

INTRODUCTION

Cancer is the largest cause of death globally, accounting for 7.6 million fatalities (about 13% of all deaths) in 2008, with low and middle-income nations accounting for roughly 70% of all cancer deaths. Cancer-related deaths are expected to increase to more than 11 million by 2030 [1]. Psychological discomfort affects a large percentage of cancer patients. In the available research, the frequency of prevalent mental illnesses among cancer patients varies substantially [2]. The average prevalence of depression using diagnostic interviews is roughly 13%, and it varies between 5% and 20% utilizing all assessment methods [3, 4]. Adjustment disorder, low mood, anxiety, diminished life satisfaction, or loss of self-esteem is common psychological signs [5]. Depressive disorders are two to three times more common among cancer patients than in the general population, according to previous studies [6]. Mitchell *et al.*, 2011; Krebber *et al.*, 2014; reported various heterogeneous prevalence rates that differed according to clinical settings (outpatient clinics,

hospital settings, and palliative care), stage of the disease (newly diagnosed, recurrence, survivorship, or advanced stages), and phase of treatment (5.0% to 49.0) [7-9]. Furthermore, the prevalence of depressive disorders among cancer patients varied by cancer location, ranging from 5.6% for genitourinary cancer to 13.1% for lung cancer patients [10]. Furthermore, patients with severe disease and advanced stages of cancer are more likely to develop depression [11]. Apart from biological factors (cancer type, stage of disease, and treatment-related factors), a previous critical review that included 11 previous systematic reviews and meta-analyses aimed at identifying risk factors for depression among cancer patients found a wide range of factors that play a key role in developing depression [12]. Jordan had a total of 10,898 new cancer cases diagnosed in 2018, out of a population of 9,903,798 people. The incident rate was 157.8 per 100,000, whereas the fatality rate was 89.7 per 100,000. Breast cancer, lung cancer, colorectal cancer, bladder cancer, and leukemia were the top five most common cancers [13]. Despite the fact that depression is a common cancer consequence with a greater prevalence than in the general population, it is sometimes overlooked.

Objective

The aim of this study was to describe the prevalence and risk factors of depression and anxiety among cancer patients of combined military hospital Dhaka.

MATERIALS AND METHODS

Study Design

This is a cross-sectional observational study.

Place of Study

This study was carried out in the Cancer Center, Combined Military Hospital (CMH), Dhaka. CMH Dhaka is a tertiary level hospital which was established in 14 August 1947. CMH Dhaka is a 1200 bedded specialized hospital that provides outdoor and indoor treatment for the armed forces personnel, entitled civilians and civilians not entitled. Cancer Center is a part of CMH Dhaka that was inaugurated on 13 May 2018 to cope with increasing number of cancer patients and to provide modern treatment facilities to them. Cancer center is a 100 bedded facility that has been providing indoor and outdoor treatment for cancer patients in armed forces including civilian population. It facilitates chemotherapy, radiotherapy, brachytherapy and day care treatment for the cancer patients. There is no study done among cancer patients to see the proportion of patients having depression and anxiety symptoms with cancer in this treatment facility. In context of Bangladesh armed forces, no study has been done regarding this subject before.

Period of Study

July, 2020 to December, 2020.

Study Population

All available cancer patients of all age attending OPD and admitted in the inpatient department of Cancer Center, CMH Dhaka within the study period.

Sampling Technique

Convenient sampling technique was applied for selecting the samples.

Inclusion Criteria

i. All available cancer patients attending OPD and inpatient department of Cancer Center, CMH Dhaka during the study period.
ii. Patients do not have any past history of psychiatric disorder.
iii. Patients were included irrespective of age and sex.
iv. Patients had no past history of substance abuse.

Exclusion Criteria

i. Unwilling to participate.
ii. Seriously ill/ Unconscious/Confused/ Comatose patient.
iii. Patient who does not want to give written consent.

Sample Size

The sample size is adjusted to 174. The study group was constituted of 150 cancer patients due to lack of resources and time constraint.

Data Collection

Data were collected anonymously by face-to-face interview using BDI-II & HAM-A and another socio demographic semi-structured questionnaire from the patients who are fulfilling the inclusion criteria and getting treatment as an inpatient or outpatient from Cancer Center CMH Dhaka. The patients were informed that the purpose of the research is to find out proportion of patients having depression and anxiety symptoms among them.

Statistical Analysis

Data was processed and analyzed with the help of computer program SPSS version 26. Quantitative data were expressed as mean and standard deviation and qualitative data were expressed as frequency and percentage. A probability (p) value of < 0.05 was considered statistically significant and $p<0.001$ was considered highly significant but $p > 0.05$ taken as non-significant.

RESULTS

This was a cross sectional study was conducted to determine the proportion of patients

having depression and anxiety symptoms with cancer. One fifty (150) respondents were collected by convenient sampling technique. BDI-II and HAM-A scale was applied to measure the depression and anxiety of the cancer patients**.** Table-3.3 showed the age distribution of the study respondents, in this series age ranged from 24-60 years. Maximum patients 41.3% were between 51-60 followed by 30.0% patient's age within 41-50 years and minimum 8.0% in age group 20-30 years. Mean age 46.5±9.5 years.

Table 1: Distribution of study patients according to age (N=150)

Age group (in years)	n	%
20-30 yrs.	12	8.0
31-40 yrs.	31	20.7
41-50 yrs.	45	30.0
51-60 yrs.	62	41.3
Mean ±SD	46.5±9.5	
Range	(24.0 - 60.0) years	

Among 150 respondents, 98(65.3%) were male and 52(34.7%) respondents were female. Male: female ratio 1.9:1.

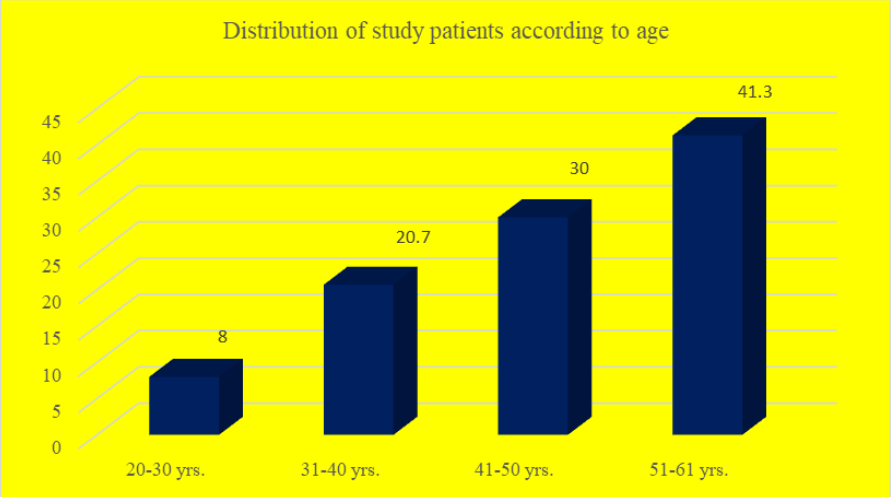

Figure: I Distribution of study patients according to age (N=150)

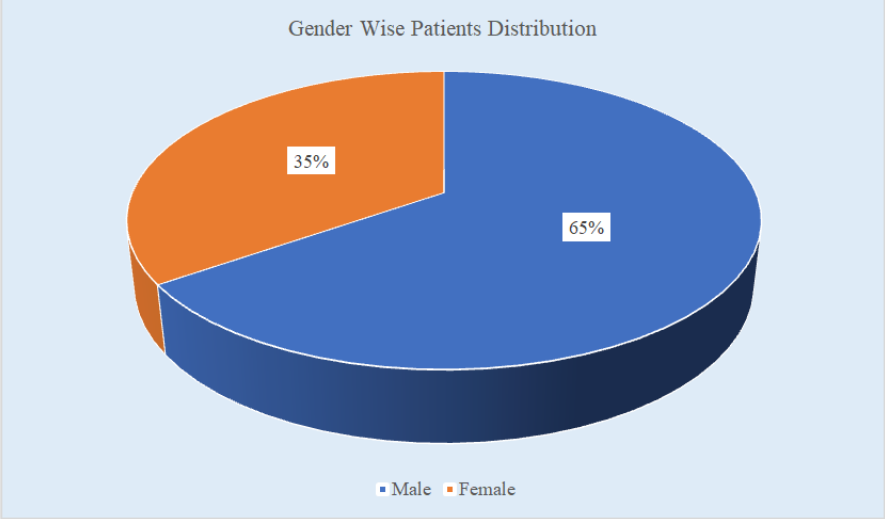

Figure: II Distribution of study patients according to gender (N=150)

Table 2 showed the type of depression symptom of cancer patients. Among 150 cancer patients, maximum 61(40.7%) had moderate depression symptom followed by 45(30.0%) patients had mild depression symptom, 26(17.3%) patients had severe depression symptom and 18(12.0%) patients had

minimum depression symptom. The overall mean score of Beck Depression Inventory (BDI-II) was 22.1±8.4 with range 5 to 45.

Table 2: Distribution of the study patients by type of depression (N=150)

Type of depression	n	%
Minimum depression (0-13)	18	12.0
Mild depression (14-19)	45	30.0
Moderate depression (20-28)	61	40.7
Severe depression (29-63)	26	17.3
Mean ±SD (BDI-II score)	22.1±8.4	
Range (min-max)	(5-45)	

Table 3 showed the type of anxiety symptom of cancer patients. Among 150 cancer patients, maximum 68(45.3%) had moderate to severe anxiety symptom followed by 44(29.3%) patients had mild to moderate anxiety symptom, 38(25.3%) patients had minimum anxiety symptom. The overall mean score of Hamilton Anxiety Rating Scale (HAM-A) was 21.6±6.7 with range 7 to 30.

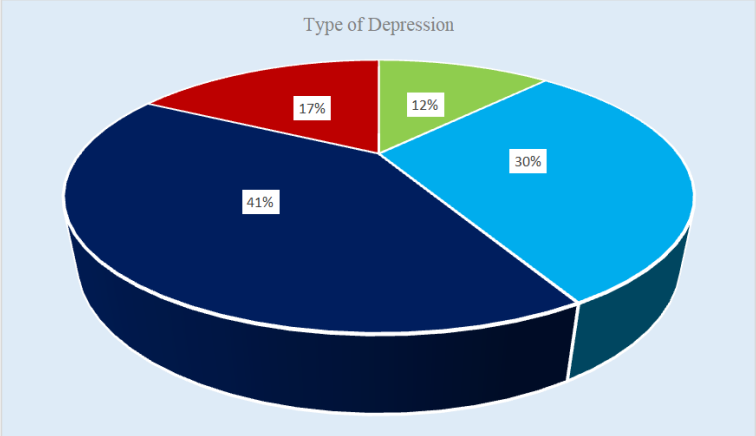

Figure: III Types of Depression among the Patients (N=150)

Table 3: Distribution of the study patients by type of anxiety (N=150)

Type of anxiety	n	%
Mild anxiety (<17)	38	25.4
Mild to moderate anxiety (18-24)	44	29.3
Moderate to severe (25-30)	68	45.3
Mean ±SD (HAM-A score)	22.1±8.4	
Range (min-max)	(5-30)	

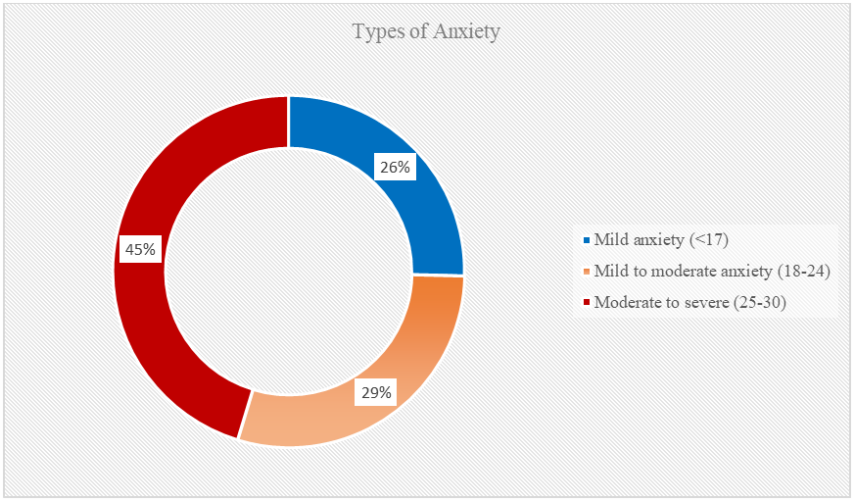

Figure: IV Types of Anxiety among the Patients (N=150)

Table 4 shows the cancer types of the respondent patients. Regarding type of cancer, maximum patients (20.7%) had breast cancer followed cervical cancer 14.7% and gallbladder cancer 12.7% and lung cancer 11.3%.

Table 4: Distribution of the study respondents by cancer type (N=150)

Cancer type	n	%
Prostate cancer	10	6.7
Bladder cancer	10	6.7
Lymphoma	16	10.7
Breast cancer	31	20.7
Thyroid cancer	2	1.3
Lung cancer	17	11.3
Cervical cancer	22	14.6
Gallbladder cancer	19	12.7
Colon cancer	2	1.3
Leukemia	11	7.3
Stomach cancer	8	5.3
Periampullary carcinoma with liver metastasis	1	0.7
Sarcoma	1	0.7

Table 5 showed the cancer stage of the study patients, stage 2 in 33.3% cases, 28.0% patients' stage 3, 21.3% patients had stage 4 and stage 1 in 17.3% cases.

Table 5: Distribution of the study respondents by cancer stage (N=150)

Cancer stage	n	%
Stage 1	26	17.3
Stage 2	50	33.4
Stage 3	42	28.0
Stage 4	32	21.3

Table 6 showed the association of depression symptom with cancer stage. Among 32 patients with stage 4, maximum (43.8%) had severe depression symptom, among 42 patients with stage 3 maximum (35.7%) patients had moderate depression symptom, among stage 2 maximum (84.0%) had mild to moderate depression symptom. Significant relation was found among cancer stage with level of depression symptom ($p<0.05$).

Table 6: Association of depression with cancer stage (N=150)

Cancer stage	n	Level of Depression				p-value
		Minimum depression	Mild depression	Moderate depression	Severe depression	
Stage 1	26	7(26.9%)	6(23.1%)	13(50.0%)	0(0.0%)	<0.001[s]
Stage 2	50	8(16.0%)	21(42.0%)	21(42.0%)	0(0.0%)	
Stage 3	42	3(7.1%)	12(28.6%)	15(35.7%)	12(28.6%)	
Stage 4	32	0(0.0%)	6(18.8%)	12(37.5%)	14(43.7%)	

Table 7 showed the association of anxiety symptom with cancer stage. Among 32 patients with stage 4, maximum (87.5) had moderate to severe anxiety symptom, among 42 patients with stage 3 maximum (45.2%) patients had moderate to severe anxiety symptom, among stage 2 maximum (34.0%) had mild to moderate anxiety symptom. Significant relation was found among cancer stage with level of anxiety symptom ($p<0.05$).

Table 7: Association of anxiety with cancer stage (N=150)

Cancer stage	n	Level of Anxiety			p-value
		Mild anxiety	Mild to moderate anxiety	Moderate to severe anxiety	
Stage 1	26	15(57.7%)	7(26.9%)	4(15.4%)	<0.001[s]
Stage 2	50	16(32.0%)	17(34.0%)	17(34.0%)	
Stage 3	42	7(16.7%)	16(38.1%)	19(45.2%)	
Stage 4	32	0(0.0%)	4(12.5%)	28(87.5%)	

DISCUSSION

In present study showed age variation ranged from 24-60 years. Among them 41.3% were between 51-60 followed by 30.0% was within 41-50 years and 8.0% in age group 20-30 years. Mean age 46.5±9.5 years. Among 150 respondents, 65.3% were male and 34.7% respondents were female. Male: female ratio 1.9:1. There were significant relationships between anxiety, depression symptoms and the age group of the patients ($p<0.001$ and $p<0.001$, respectively) with higher frequency in older ages. There were no significant relationships between anxiety and depression symptom with sex ($p>0.05$). In agreement with this a study by Nikkbakhsh *et al.*, [14] reported significant association between anxiety, depression with age group and no significant relationship with sex. In this study 88% among 150 cancer patients had depression symptoms. In agreement with this study (Vaidya *et al.*, 2019) [15] reported the proportion of depression was found to be quite high (73.69%) as compared to most of the other studies conducted by (Bhattacharyya *et al.*, 2017) [16] (55.7%). Another study by (Jadoon *et al.*, 2010) [17] who found the prevalence of depression to be 66%. There can be number of reasons for this difference. In most of the cases in developed countries study showed lower mental illness prevalence compared to developing and poor countries. In our study most of the population is from average income group and from urban area that are cautious about their health and seeking best possible treatment. In present study showed 40.7% had moderate depression symptom followed by 30.0% patients had mild depression symptom, 17.3% patients had severe depression symptom and 12.0% patients had minimum depression symptom. The overall mean score of Beck Depression Inventory (BDI-II) was 22.1±8.4 with range 5 to 45. Vaidya *et al.*, [15] revealed that among the study subjects 15.78% had borderline clinical depression, 46.31% had moderate depression and 11.57% had severe depression. In this study maximum 45.3% had moderate to severe anxiety symptoms followed by 29.3% patients had mild to moderate anxiety symptom, 25.3% patients had minimum anxiety symptoms. The overall mean score of Hamilton Anxiety Rating Scale (HAM-A) was 21.6±6.7 with range 7 to 30. Naser *et al.*, [18] reported moderate anxiety in 18.0% and 20.0% had severe anxiety. In present study showed cancer stage 2 in 33.3% cases, 28.0% patients' stage 3, 21.3% patients had stage 4 and stage 1 in 17.3% cases. Among 32 patients with stage 4, maximum 43.7% had severe depression symptom, among 42 patients with stage 3 maximum 35.7% patients had moderate depression symptom, among stage 2 maximum 84.0% had mild to moderate depression symptom. Significant relation was found among cancer stage with level of depression symptom ($p<0.05$). Among 32 patients with stage 4, maximum 87.5% had moderate to severe anxiety symptom, among 42 patients with stage 3 maximum 45.2% patients had moderate to severe anxiety symptom, among stage 2 maximum 34.0% had mild to moderate anxiety symptom. Significant relation was found among cancer stage with level of anxiety symptom ($p<0.05$). In consonance with present study Khalil *et al.*, [19] reported 25(8.3%) having stage 1 cancer, 33(11%) having stage 2, 35(11.7%) having stage 3, 24(8%) having stage 4, and 183(61%) not knowing what their cancer stage was. Mushtaq *et al.*, [5] demonstrated the frequency of depression was more in stage III as compare to stage I and II, and the results were statistically significant. Stage of cancer influencing depression and anxiety to provide a basis for subsequent correlational studies on psychological interventions.

CONCLUSION

Depression is common in cancer patients. Cancer patients face anguish and a horrible death. Sadness and grief are natural responses to the crises that illness brings. The most important thing to remember is that sadness and anxiety are treatable conditions. Cancer causes a significant amount of psychological morbidity. Psychiatrists can play a critical role in an integrated oncology care team by offering specialized treatment that reduces psychological morbidity while also improving cancer patients' overall quality of life.

REFERENCES

1. Ferlay, J., Shin, H. R., Bray, F., Forman, D., Mathers, C., & Parkin, D. M. (2010). Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *International journal of cancer*, *127*(12), 2893-2917.
2. Villoria, E., & Lara, L. (2018). Assessment of a hospital anxiety and depression scale for cancer patients. *Revista médica de Chile*, *146*(3), 300-307.
3. Katsaouni Panagiota, M. D., & Antonis Maillis, M. D. (2017). Depression, Pain and Mental State in Cancer Patients. *International Journal of Caring Sciences*, *10*(2), 955-962.
4. Katsaouni Panagiota, M. D., & Antonis Maillis, M. D. (2017). Depression, Pain and Mental State in Cancer Patients. *International Journal of Caring Sciences*, *10*(2), 955-962.
5. Mushtaq, R., Ansar, A., Anwar Bibi, H. K., Ali, J., Islam, A., Saleem, F., ... & Tariq, I. (2017). Frequency of depression among cancer patients. *Annals of PIMS ISSN*, *1815*, 2287, 13(1)83-87.
6. Massie, M. J. (2004). Prevalence of depression in patients with cancer. *JNCI Monographs*, *2004*(32), 57-71.
7. Mitchell, A. J., Chan, M., Bhatti, H., Halton, M., Grassi, L., Johansen, C., & Meader, N. (2011). Prevalence of depression, anxiety, and adjustment disorder in oncological, haematological, and palliative-care settings: a meta-analysis of 94 interview-based studies. *The lancet*

oncology, *12*(2), 160-174. doi: 10.1016/s1470-2045(11)70002-x

8. Krebber, A., Buffart, L., Kleijn, G., Riepma, I., & de Bree, R. Leemans. C; Becker, A; Brug. J; van Straten, C; Cuijpers, P and Verdonck-de Leeuw I (2014). *Prevalence of depression in cancer patients: a meta-analysis of diagnostic interviews and self-report instruments Psycho-Oncology*, *23*, 121-130. doi: 10.1002/pon.3409
9. Walker, J., Hansen, C. H., Martin, P., Sawhney, A., Thekkumpurath, P., Beale, C., ... & Sharpe, M. (2013). Prevalence of depression in adults with cancer: a systematic review. *Annals of oncology*, *24*(4), 895-900.
10. Walker, J., Hansen, C. H., Martin, P., Symeonides, S., Ramessur, R., Murray, G., & Sharpe, M. (2014). Prevalence, associations, and adequacy of treatment of major depression in patients with cancer: a cross-sectional analysis of routinely collected clinical data. *The Lancet Psychiatry*, *1*(5), 343-350. doi: 10.1016/s2215- 0366(14)70313-x
11. Kaasa, S., Malt, U., Hagen, S., Wist, E., Moum, T., & Kvikstad, A. (1993). Psychological distress in cancer patients with advanced disease. *Radiotherapy and oncology*, *27*(3), 193-197. doi: 10.1016/0167-8140(93)90073-h
12. Caruso, R., Nanni, M. G., Riba, M., Sabato, S., Mitchell, A. J., Croce, E., & Grassi, L. (2017). Depressive spectrum disorders in cancer: prevalence, risk factors and screening for depression: a critical review. *Acta Oncologica*, *56*(2), 146-155. doi: 10. 1080/0284186x.2016.1266090
13. World Health Organization. (2018). International Agency for Research on Cancer, Globocan 2018-Jordan. Available online at: https://gco.iarc.fr/today/data/factsheets/populations/400-jordan-fact-sheets.pdf (accessedMay 1, 2020).
14. Nikbakhsh, N., Moudi, S., Abbasian, S., & Khafri, S. (2014). Prevalence of depression and anxiety among cancer patients. *Caspian journal of internal medicine*, *5*(3), 167.
15. Vaidya, S. S., & Sharma, S. K. (2019). Depression in cancer patients undergoing chemotherapy in a tertiary care hospital: a cross-sectional study. *International Journal of Community Medicine and Public Health*, 6(7), 3102.
16. Bhattacharyya, N., Gubbels, S. P., Schwartz, S. R., Edlow, J. A., El-Kashlan, H., Fife, T., Holmberg, J. M., Mahoney, K., Hollingsworth, D. B., Roberts, R., Seidman, M. D., Steiner, R. W., Do, B. T., Voelker, C. C., Waguespack, R. W., & Corrigan, M. D. (2017). Clinical Practice Guideline: Benign Paroxysmal Positional Vertigo. *Otolaryngol Head Neck Surg*, 156(3_suppl), S1-S47. doi: 10.1177/0194599816689667. PMID: 28248609.
17. Jadoon, N. A., Yaqoob, R., Raza, A., Shehzad, M. A., & Zeshan, S. C. (2010). Anxiety and depression among medical students: a cross-sectional study. *JPMA. The Journal of the Pakistan Medical Association*, *60*(8), 699-702. PMID: 20726214.
18. Mulla, N., Alsharif, M. H., Badr, G. H., Alobidi, Z. A. A., & Alharbi, A. A. A. (2020). The frequency and associated factors of anxiety and depression among cancer patients in Medina, Saudi Arabia. *International Journal of Medicine in Developing Countries*, 4(10), 1623-1629.
19. Khalil, A., Faheem, M., Fahim, A., Innocent, H., Mansoor, Z., Rizvi, S., & Farrukh, H. (2016). Prevalence of depression and anxiety amongst cancer patients in a hospital setting: a cross-sectional study. *Psychiatry journal*, *2016*.