OPEN ACCESS

Saudi Journal of Medicine
Abbreviated Key Title: Saudi J Med
ISSN 2518-3389 (Print) | ISSN 2518-3397 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Original Research Article

Socio-Demographic Profile Analysis of Depression and Anxiety Patients of Cancer Center of Combined Military Hospital Dhaka

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DOI: 10.36348/sjm.2022.v07i08.00X | **Received:** 06.07.2022 | **Accepted:** 10.08.2022 | **Published:** 22.08.2022

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Abstract

Background: Cancer diagnosis can have an extensive impact on mental health and comfort. Depression and anxiety may hamper cancer treatment and recovery, as well as quality of life and survival. Cancer is an important incident in one's life which has substantial outcomes for patients and their families as well. The major psychological significance in cancer patients is depression that often takes less attention. ***Objective:*** The objective was to determine the prevalence of anxiety and depression among cancer patients and whether these conditions were associated with certain sociodemographic factors. ***Methods:*** It was a cross-sectional study. By convenient sampling technique, a total of 150 samples were selected. The patients were studied after histopathological confirmation of diagnosis of cancer. Sociodemographic and other data was 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. Moderate depression was higher in-service holder 53.8%. Among agriculture worker, 38.6% had mild depression symptom, within house wife 63.2% had mild to moderate depression symptom. No significant relation was found occupation with depression symptom ($p>0.05$). While moderate anxiety symptom was higher in-service holder 42.3%. Among agriculture worker, maximum 54.5% had moderate to severe anxiety symptom, within house wife 47.4% had moderate to severe anxiety symptom. No significant relation was found occupation with anxiety symptom also ($p>0.05$). Significant relation was found among income group with level of depression and anxiety symptom ($p<0.05$) as study showed both depression and anxiety were found more among higher income group population than lower income population. ***Conclusion:*** In this study both higher education and higher socioeconomic status were found to be predictors of depression and anxiety.

Keywords: *Depression, Anxiety, Cancer diagnosis, Quality of life, Socio-demographic factors*

INTRODUCTION

Despite improvements in medical care, learning that you have cancer still leaves many people fearful of morbidity and mortality. Dealing with the difficulties of living with cancer sometimes feels like a death sentence to most people, and it elicits a wide range of debilitating feelings. Fear of the future, accepting mortality, and anxiety about impending pain and suffering are common themes. The biggest cause of death is cancer, and this mortality is rising quickly every day [1]. According to the World Health Organization, tumors are the leading cause of death in 91 nations throughout the globe [1]. Cancer is a dangerous disease, as evidenced by the fact that 1 in 6 deaths worldwide are caused by it [2]. Being a family member who is caring for a cancer sufferer is incredibly

stressful. Being a family caregiver, experiencing loved ones' suffering is incredibly painful. Both sexes exhibit heightened levels of anxiety when providing family care, but women exhibit expressly excessive amounts of depression, which significantly lowers their quality of life [3]. Additionally, it has been demonstrated that cancer can harm patients' children as well as their parents or spouses. Children of the sick were more likely to experience psychological, emotional, and behavioral issues [4]. A substantial proportion of cancer patients suffer from psychological distress. The occurrence of mutual mental disorders among people with cancer varies widely in the published literature [5]. The mean prevalence of depression using diagnostic interviews is around 13% and using all assessment methods it varies from approximately 05 to 20% [6, 7]. The psychological manifestations generally take the form of adjustment disorder, depressed mood, anxiety, impoverished life satisfaction or loss of self-esteem [8]. A systematic review and meta-analysis show the prevalence of major depression (15%), minor depression (20%) and anxiety (10%) in patients treated for cancer. [9] The National Mental Health Survey carried through out Bangladesh in 2018-19 found that among general population Depressive disorder is (6.7%) and anxiety disorder is (4.5%) [10]. Two thirds of patients with cancer and depression also have clinically significant anxiety symptoms [11]. Figures vary by cancer type, with major depression affecting an estimated 13% of patients with lung cancer, 11% of those with gynecological cancers, 9% in breast cancer, 7% in colorectal cancer and 6% in genitourinary cancers [12]. The highest levels of anxiety are reported in lung, gynecological and hematological cancers. Evidence suggests these variations relate to the differing prognoses, pain levels and degrees of body image disruption associated with each tumor type as well as specific tumor related neuropsychiatric effects and treatment-related neuropsychiatric side effects [11]. The prevalence of major depression in cancer patients greatly exceeds than that among the general population in Bangladesh (6.7%) [10]. However, 73% of these depressed cancer patients do not receive effective psychiatric treatment and only 5% see a mental health professional. Symptoms of anxiety in patients with cancer more often coexist with clinical depression than present as anxiety alone and treatment for depression may also resolve anxiety [13].

OBJECTIVE

The objective was to determine the prevalence of anxiety and depression among cancer patients and whether these conditions were associated with certain sociodemographic factors.

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 of the study group was constituted of 150 cancer patients.

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 26.0. Quantitative data were expressed as frequency and percentage as mean and standard deviation. 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

Table 1, 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% patients 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 respondents according to age (N=150)

Age group (in years)	n	%
20-30	12	8.0
31-40	31	20.7
41-50	45	30.0
51-60	62	41.3
Total	150	100
Mean ±SD	46.5±9.5	
Range	(24.0 - 60.0) years	

Table 1 showed the sex distribution of study respondents. Among 150 respondents, 98(65.3%) were male and 52(34.7%) respondents were female. Male: female ratio 1.9:1.

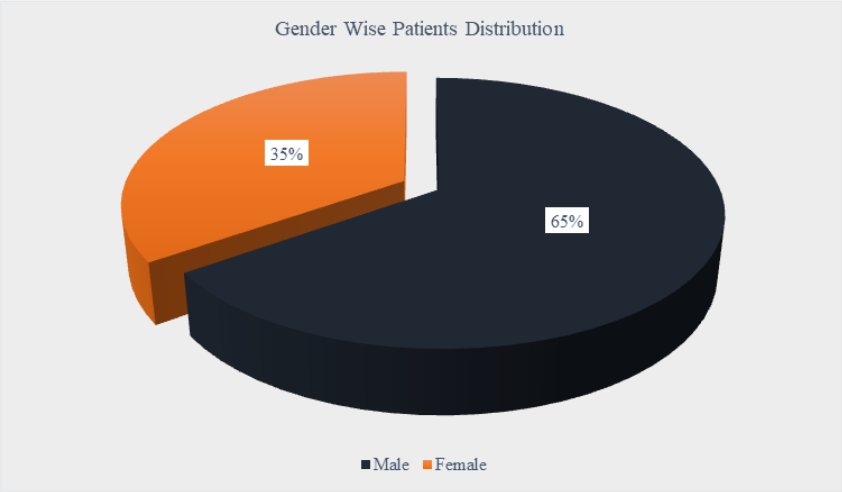

Figure I: Pie diagram showing gender distribution of the participants (N=150)

Table 2 shows the socio-demographic profile of the study respondents. Regarding occupation, maximum respondents were service holder (34.7%) followed by agriculture worker 29.3%, housewife 25.3% and businessman 10.7%. It was found that the maximum study respondents 40.0% were completed primary level followed by 28% illiterate and 17.3% were secondary. Regarding marital status, most of the respondents were married 83.3% and 7.3% patients were widower and 4.7% patients were separated. Most of the respondents (40.7%) had monthly family income 15000-30000 BDT followed by 31.3% patients had monthly income 30000-45000 BDT and minimum income above >45000 BDT in 4.7% cases. Majority of the respondents (61.3%) had joint family and 38.7% respondents had nuclear family. Maximum respondents (52.7%) came from urban area and 32.0% respondents from semi-urban area.

Table-2: Distribution of study respondents by Socio-Demographic profile (N=150)

Occupation	n	%
Service	52	34.7
Agricultural worker	44	29.3
Businessman	16	10.7
Housewife	38	25.3
Education Status		
Illiterate	35	23.3
Primary	50	33.3
Secondary	12	8.0

Higher secondary	19	12.7
Graduate	34	22.7
Marital status		
Single	7	4.7
Married	125	83.3
Widower	11	7.3
Separated	7	4.7
Monthly family income (BDT)		
<15000 Tk.	35	23.3
15000-30000 Tk.	61	40.7
30000-45000 Tk.	47	31.3
>45000 Tk.	7	4.7
Family type		
Nuclear family	58	38.7
Joint family	92	61.3
Area of residence		
Urban	79	52.7
Semi-urban	48	32.0
Rural	23	15.3
Total	150	100

Table 3 showed the association of depression symptom with occupation. Moderate depression symptom was higher in-service holder (53.8%). Among agriculture worker, maximum (38.6%) had mild depression symptom, within house wife 63.2% had mild to moderate depression symptom. No significant relation was found with occupation and depression symptom ($p>0.05$).

Table-3: Association of Depression with occupation (N=150)

Occupation	**n**	**Level of Depression**				**p-value**
		Minimum Depression	Mild Depression	Moderate Depression	Severe Depression	
Service	52	6(11.5%)	13(25.0%)	25(48.1%)	8(15.4%)	0.596^{ns}
Agricultural worker	44	5(11.4%)	17(38.6%)	16(36.4%)	6(13.6%)	
Businessman	16	3(18.8%)	3(18.8%)	8(50.0%)	2(12.5%)	
Housewife	38	4(10.5%)	12(31.6%)	12(31.6%)	10(26.3%)	
Total	150	18(12.0%)	45(30.0%)	61(40.7%)	26(17.3%)	

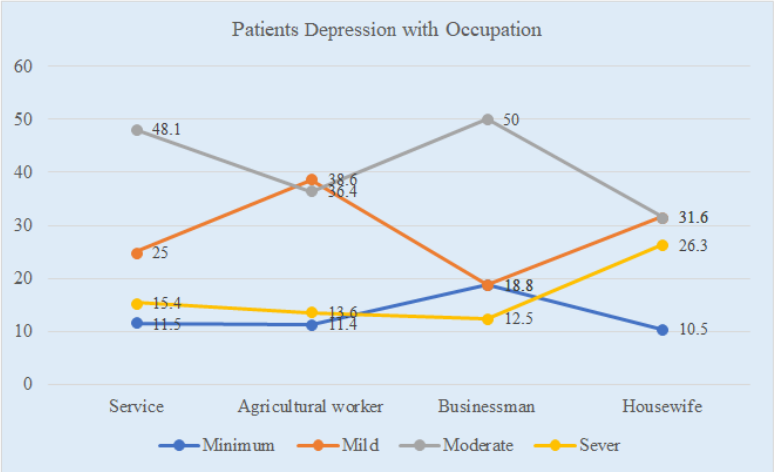

Figure II: Line diagram showing Occupation Wise Depression among the Cancer Patients (N=150)

Among 42 illiterate respondents, 38.1% cases had moderate depression symptom, In 60 primary level education completed, 43.3% patients had moderate depression symptom, in secondary education maximum 38.5% had mild depression symptom. In 13 patients with HSC level of education, 38.5% had moderate depression symptom, and with 9 patients with graduate level of education maximum 77.8% had moderate

depression symptom. No significant relation was found with education level and level of depression symptom (p>0.05).

Table-4: Association of Depression with education (N=150)

Education	n	Level of Depression				p-value
		Minimum Depression	Mild Depression	Moderate Depression	Severe Depression	
Illiterate	42	5(11.9%)	13(31.0%)	16(38.1%)	8(19.0%)	0.516^{ns}
Primary	60	5(8.3%)	16(26.7%)	26(43.3%)	13(21.7%)	
Secondary	26	5(19.2%)	10(38.5%)	8(30.8%)	3(11.5%)	
Higher secondary	13	2(15.4%)	5(38.5%)	4(30.8%)	2(15.4%)	
Graduate	9	1(11.1%)	1(11.1%)	7(77.8%)	0(0.0%)	
Total	150	18(12.0%)	45(30.0%)	61(40.7%)	26(17.3%)	

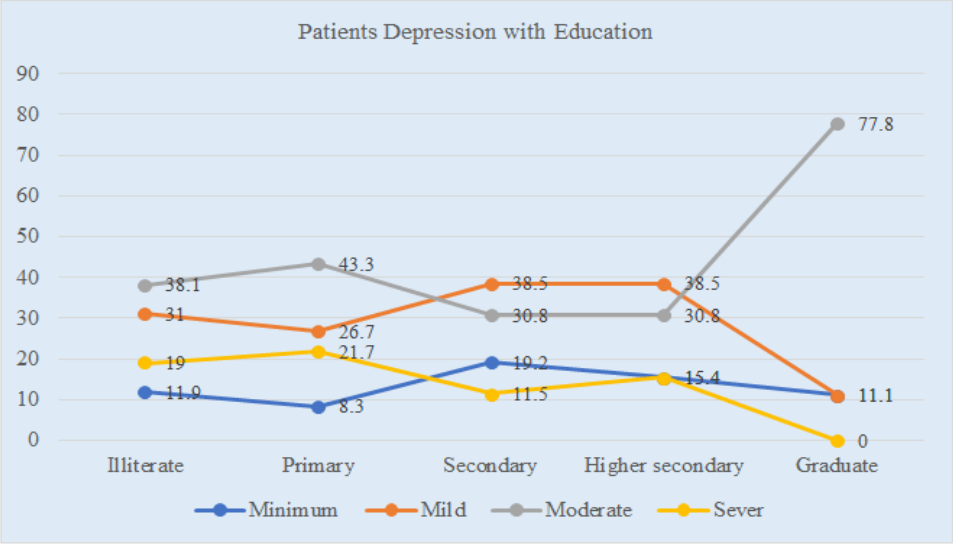

Figure III: Line diagram showing Education Wise Depression among the Cancer Patients (N=150)

Among the patient's minimum income group 40% patients had severe depression symptom, and maximum income group out of 36 respondents, 85.6% participants had mild to moderate depression symptom. In 15000 to 30000 BDT. group maximum 52.5% had moderate depression symptom and 30000 to 45000 BDT. income group 38.3% respondents had mild depression symptom. Significant relation was found among income group with level of depression symptom (p<0.05).

Table-5: Association of Depression with Monthly Family Income (N=150)

Monthly income (BDT)	n	Level of Depression				p-value
		Minimum Depression	Mild Depression	Moderate Depression	Severe Depression	
<15000 Tk.	35	4(11.4%)	7(20.0%)	10(28.6%)	14(40.0%)	0.004^{s}
15000-30000 Tk.	61	4(6.6%)	17(27.8%)	32(52.5%)	8(13.1%)	
30000-45000 Tk.	47	9(19.1%)	18(38.4%)	16(34.0%)	4(8.5%)	
>45000 Tk.	7	1(14.2%)	3(42.9%)	3(42.9%)	0(0.0%)	
Total	150	18(12.0%)	45(30.0%)	61(40.7%)	26(17.3%)	

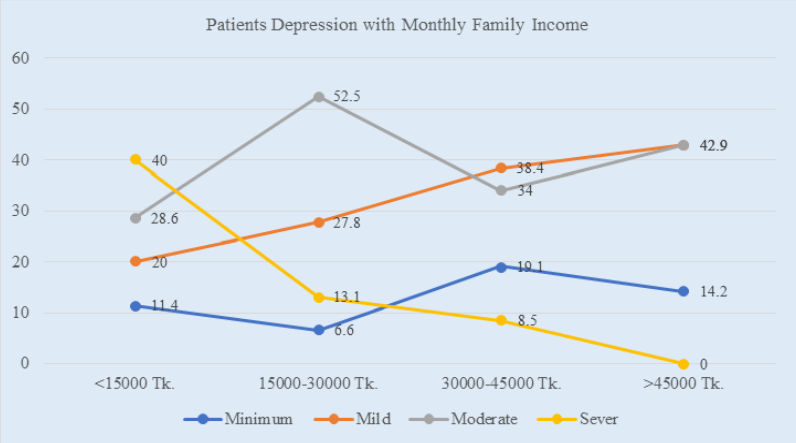

Figure IV: Line diagram showing Family Income Wise Depression among the Cancer Patients (N=150)

Table 6, showed the association of anxiety symptom with occupation. Moderate anxiety symptom was higher in-service holder (42.3%). Among agriculture worker, maximum (54.5%) had moderate to severe anxiety symptom, within house wife 47.4% had moderate to severe anxiety symptom. No significant relation was found occupation with anxiety (p>0.05).

Table-6: Association of Anxiety with Occupation (N=150)

Occupation	n	Level of Anxiety			p-value
		Mild Anxiety	Mild to Moderate Anxiety	Moderate to Severe Anxiety	
Service	52	13(25.0%)	22(42.3%)	17(32.7%)	0.187^{ns}
Agricultural worker	44	10(22.7%)	10(22.7%)	24(54.6%)	
Businessman	16	5(31.3%)	2(12.5%)	9(56.2%)	
Housewife	38	10(26.3%)	10(26.3%)	18(47.4%)	
Total	150	38(25.3%)	44(29.4%)	68(45.3%)	

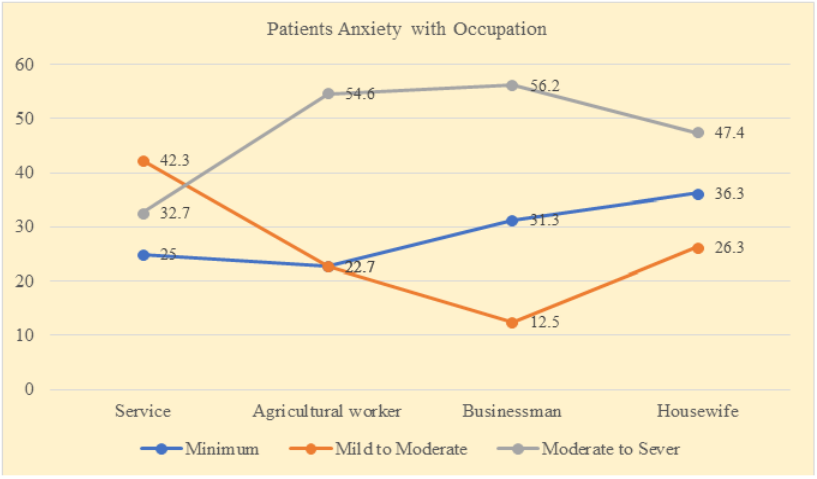

Figure V: Line diagram showing Occupation Wise Anxiety among the Cancer Patients (N=150)

Among 42 illiterates, 59.5% cases had moderate to severe anxiety symptom, in 60 primary educations, 50% patients had moderate to severe anxiety symptom. In secondary education maximum 69.4% had mild to severe anxiety symptom. In 13 patients with HSC level of education, 46.2% had mild to moderate anxiety symptom, and with 9 patients with graduate level of education maximum 88.8% had moderate anxiety symptom. No significant relation was found education level with level of anxiety symptom (p>0.05).

Table-7: Association of Anxiety with Education (N=150)

Education	n	Level of Anxiety			p-value
		Mild anxiety	Mild to moderate anxiety	Moderate to severe anxiety	
Illiterate	42	7(16.7%)	10(23.8%)	25(59.5%)	0.127^{ns}
Primary	60	15(25.0%)	15(25.0%)	30(50.0%)	
Secondary	26	8(30.8%)	9(34.6%)	9(34.6%)	
Higher secondary	13	4(30.7%)	6(46.2%)	3(23.1%)	
Graduate	9	4(44.4%)	4(44.4%)	1(11.2%)	
Total	150	38(25.3%)	44(29.4%)	68(45.3%)	

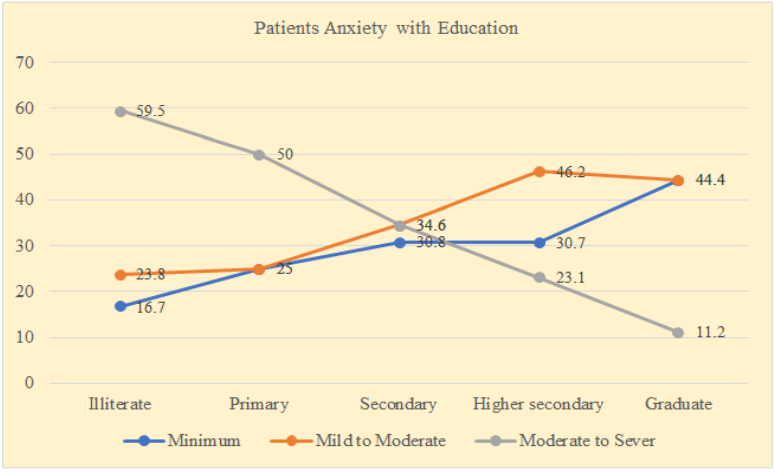

Figure VI: Line diagram showing Education Wise Anxiety among the Cancer Patients (N=150)

Among the respondent's minimum income group 71.4% patients had moderate to severe anxiety symptom, and maximum income group out of 36 respondents, 57.1% participants had mild to moderate anxiety symptom. In 15000 to 30000 BDT. group maximum 37.7% had mild anxiety symptom and 30000 to 45000 BDT. income group 44.7% respondents had moderate to severe anxiety symptom. Significant relation was found among income group with level of anxiety ($p<0.05$).

Table-8: Association of Anxiety with monthly family income (N=150)

Monthly income (BDT)	n	Level of Anxiety			p-value
		Mild anxiety	Mild to moderate anxiety	Moderate to severe anxiety	
<15000 Tk.	35	3(8.6%)	7(20.0%)	25(71.4%)	0.001^{s}
15000-30000 Tk.	61	23(37.7%)	16(26.2%)	22(36.1%)	
30000-45000 Tk.	47	9(19.1%)	17(36.2%)	21(44.7%)	
>45000 Tk.	7	3(42.9%)	4(57.1%)	0(0.0%)	
Total	150	38(25.3%)	44(29.4%)	68(45.3%)	

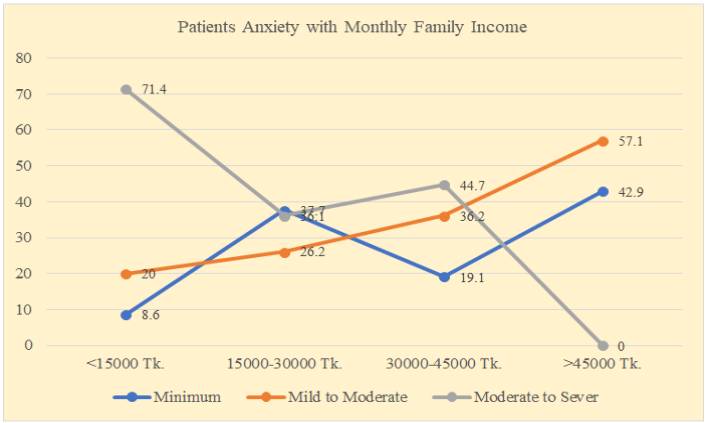

Figure VII: Line diagram showing Family Income Wise Anxiety among the Cancer Patients (N=150)

DISCUSSION

Globally, there were 17.0 million new instances of cancer and 9.5 million cancer-related

deaths in 2018, according to estimates from the International Agency for Research on Cancer (IARC). Nearly 1 in 6 fatalities worldwide are caused by cancer. The most typical cancer-related symptom is "depression," which gets worse with chemo and lasts for a very long period even after it's over. It also shows up when the illness returns and, in the end, it's a standalone prognostic factor for morbidity and mortality. According to a National Cancer Institute survey from 2008, depression affects 15–25% of cancer patients. A pathological affective response to the loss of normalcy and one's personal life brought on by a cancer diagnosis, treatment, and imminent problems is cancer-related depression [14]. According to a study, 66% of cancer patients also experienced anxiety and sadness [15]. Numerous studies have shown that such sadness and anxiety not only result in significant suffering but also reduce life expectancy, amplify pain and other symptoms, reduce adherence to anti-cancer treatment, increase the risk of suicide, and place a psychological burden on the family [16]. In present study showed age variation ranged from 24-60 years. Among them 41.3% were between 51-60 followed by 30.0% were 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*., [17] reported significant association between anxiety, depression with age group and no significant relationship with sex. In present study showed moderate depression was higher in-service holder 53.8%. Among agriculture worker, 38.6% had mild depression symptom, within house wife 63.2% had mild to moderate depression symptom. No significant relation was found occupation with depression symptom ($p>0.05$). While moderate anxiety symptom was higher in-service holder 42.3%. Among agriculture worker, maximum 54.5% had moderate to severe anxiety symptom, within house wife 47.4% had moderate to severe anxiety symptom. No significant relation was found occupation with anxiety symptom also ($p>0.05$). Khalil *et al*., [18] demonstrated the highest majority of the patients answered occupation as unknown 123 (41%), followed by housewives, 79(26.3%), students, 15 (5%), land/cattle farmer, 14 (4.7%), and laborer, 14 (4.7%) and stated that there was no statistically significant relation with presence of depression ($p=0.596$) and anxiety ($p=0.187$). In present study showed among 42 illiterates, 38.1% cases had moderate depression symptom, among primary level educated population, 43.3% patients had moderate depression symptom, among secondary education group 38.5% had mild depression symptom. No significant relation was found education level with level of depression symptom ($p>0.05$). Among 42 illiterate patients 59.5% cases had moderate to severe anxiety symptom, in 60 patients with primary education 50% patients had moderate to severe anxiety symptom, 69.4% had mild to severe anxiety symptom in secondary education, 46.2% had mild to moderate anxiety symptom in higher secondary level of education, and with 9 patients with graduate level of education maximum 88.8% had moderate anxiety symptom. No significant relation was found education level with level of anxiety symptom ($p>0.05$). A study by Hong and Tian [19] reported patients with lesser education suffered more from depression than patients having higher qualifications. As majority of our study population is from primary and secondary level and other groups with different education are not in adequate number so no significant relation was found between depression & anxiety with level of education. Among the patients <15000 BDT income group 40% patients had severe depression symptom, and >45000 BDT income group out of 36 respondents, 85.6% participants had mild to moderate depression symptom. In 15000 to 30000 BDT. group maximum 52.5% had moderate depression symptom and 30000 to 45000 BDT. income group 38.3% respondents had mild depression symptom. In <15000 BDT income group 71.4% patients had moderate to severe anxiety symptom, and >45000 BDT income group out of 36 respondents, 57.1% participants had mild to moderate anxiety symptom. In 15000 to 30000 BDT. group maximum 37.7% had mild anxiety symptom and 30000 to 45000 BDT. income group 44.7% respondents had moderate to severe anxiety symptom. Significant relation was found among income group with level of depression and anxiety symptom ($p<0.05$) as study showed both depression and anxiety were found more among higher income group population than lower income population. Bhattacharyya *et al*., [20] reported education and monthly family income indirectly reflect their standard of living and the capacity to afford treatment. In this study both higher education and higher socioeconomic status were found to be predictors of depression. This can be explained by the nature of study setting, where most of the patients come from academically and financially average background and households. Nasser *et al*., [21] reported low monthly income were significant predictor for depression and anxiety.

CONCLUSION

Our study unequivocally demonstrates that symptoms of anxiety and sadness were substantially correlated with older age group and low monthly income. Depression in a cancer patient is typical. Everyone who has cancer will endure pain and experience a horrible death. Sadness and grief are common responses to the cancer pandemic. The fact that sadness and anxiety are treatable is crucial to understand. There is a significant amount of psychiatric

morbidity as a result of cancer. By offering specialized treatment that not only lowers psychiatric morbidity but also improves overall quality of life for cancer patients, psychiatrists can play a crucial role in an integrated oncology care team.

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