

Measurement of Anxiety and Depression Among Cancer Patients Seen in an Outpatient Clinic of a Tertiary Hospital Using the Validated Hospital Anxiety and Depression Scale – Pilipino Version (HADS-P)

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Abstract

Background: Anxiety and depression, two of the most common affective disorders in cancer patients can affect one's compliance to treatment leading to poorer outcomes. Therefore, means of determining the psychological wellness of cancer patients through screening tools for anxiety and depression are an integral part of their management.

Objectives: 1) To measure the prevalence of anxiety and depression among cancer patients seen in an outpatient clinic of a tertiary hospital using the HADS-P. 2) To assess the impact of the following variables on symptoms of anxiety and depression: demographic, socio-economic, biological and health/clinical parameters.

Methodology: This is a cross-sectional analytic study involving 381 cancer patients seen in the outpatient clinic. Symptoms of anxiety and depression were measured using the HADS-P with an 11+ cut-off to identify possible cases of anxiety and depression. Univariate analysis, using STATA Version 13, was performed to identify correlates of anxiety and depression.

Results: The prevalence of anxiety, depression and mixed diagnosis (anxiety and depression) amongst this study population were 9.45%, 4.72% & 2.89%, respectively. The multivariate analysis described non-college graduates (OR=1.82, CI 0.80-4.14), poor performance status (ECOG 2-3) (OR=5.34, CI 2.44-11.71) and the newly diagnosed and with ongoing treatment patients (OR= 12.02, CI 2.67-54.04 and OR=4.04, CI 0.88-18.58, respectively) as possible correlates of anxiety. Patients with poor performance status and have moderate-severe pain were likely to experience depression (OR= 6.14, CI 2.14-17.62; OR= 2.78, CI 0.92-8.46, respectively).

Conclusions: There are several factors that can affect one's predisposition to having affective disorders. Clearly, there is a necessity to allocate resources for screening and treating affective disorders among cancer patients to improve their compliance, to achieve a more holistic approach in their management and ultimately, to improve their quality of life.

Keywords: Anxiety, Depression, Cancer patients, Hospital Anxiety and Depression Scale – Pilipino Version (HADS-P)

Introduction

In recent years, a steady increase in the number of cancer patients is seen worldwide and even here in the country. Advances in the field of medicine made it possible to detect more cases as well as prolonged period of care of cancer patients. This recent shift in the management of cancer patients make them similar to individuals suffering from chronic diseases. Consequently, the needs of cancer patients from initial diagnosis until follow up/surveillance are varied; from biological, sociological, including psychological well-being.

Previous studies have assessed the importance of psychological wellness of cancer patients and its overall role in ensuring adequate management.^{1,2} Anxiety and depression, two of the most common affective disorders in patients with chronic diseases including cancer patients, can affect one's compliance to treatment leading to poorer outcomes.³ Therefore, means of determining the psychological wellness of cancer patients through screening tools for anxiety and depression are an integral part of their treatment.

The Hospital and Anxiety Depression Scale. Several questionnaires are available for screening depression and anxiety among medically ill patients.² Among these questionnaires, the Hospital Anxiety and Depression Scale (HADS) has an advantage of being relatively short,

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self-administered, and applicable in any clinical setting.⁴ It is a 14-item questionnaire, which includes seven questions each on anxiety and depression. It includes only psychological symptoms. Due to its convenience, it has been widely used and translated into several languages including one in Filipino called the HADS/HADS-P - recently validated with a cut-off value of 11; sensitivity of 75%; specificity of 70%; and positive predictive value of 75%.²

Anxiety and Depression among Cancer patients. Anxiety and depression affects a medically-ill patient's quality of life (QoL) and compliance to medical treatment.³ Numerous factors affecting a cancer patient's QoL include cancer type and stage; time since diagnosis; patient acceptance; intensity of the disease; and the level of psychological distress by the caregiver.⁵ Also contributing to anxiety and depression is the stigma associated with cancer, due to poor understanding of the disease and some people often equating the disease as a death sentence.⁶ It was reported that patients who were stigmatized were 2.5 times more likely to be depressed.⁷

Several studies reported varying results on the prevalence of anxiety and depression in cancer patients. The range of the prevalence is highly spread apart.² One factor affecting this included assessment of a heterogeneous population sampled during various points during the illness.⁸ A local study also measured the prevalence of depression and anxiety among in-patients at a cancer center of a tertiary hospital. The reported prevalence was 52.4% (CI 36.6-67.2). Although the study also measured the association between depression and anxiety with select demographic profile such as age, gender and educational attainment, it did not measure the association of these demographic profiles specifically for Filipino cancer patients.¹ A study in British Columbia identified women and patients with lung, gynecological, or hematological malignancies during the time of diagnosis as the most depressed and anxious. Those who were suffering from anxiety and depression were mostly from the younger age group. The elderly cancer patient is less depressed or anxious due to co-morbidities and impairments already present; also, these group have better coping skills due to cognitive and emotional maturity.⁹

As a result, anxiety and depression in cancer patients need to be identified to provide a more holistic care to these patients. Prevalence must be determined to have a more cost-effective resource allocation.

Research Question

What is the prevalence of anxiety and depression among cancer patients seen in an outpatient clinic of a tertiary hospital using the validated Hospital Anxiety and Depression Scale - Pilipino Version (HADS-P)?

Objectives

The study aimed to measure the prevalence of anxiety and depression among cancer patients seen in an outpatient clinic of a tertiary hospital using the validated

Hospital Anxiety and Depression Scale - Pilipino version (HADS-P).

The study also aims to assess the impact of the following variables on symptoms of anxiety and depression:

1. Demographic (age, sex and civil status)
2. Socio-economic (highest educational attainment and employment status)
3. Biological (ECOG-Eastern Cooperation Oncology Group performance status, height, weight)
4. Health/Clinical (presence of pain, cancer site - breast, head-neck, esophagus-gastric-colon-rectum-anal; with/ without ostomy, cancer stage, stage of disease management - newly diagnosed/pre-treatment, ongoing treatment or post therapy/surveillance)

Methodology

Study Design and Setting. This is a cross-sectional study, which evaluated the prevalence of anxiety and depression among cancer patients seen in an outpatient clinic of a tertiary hospital. It also assessed correlation of different variables on prevalence of anxiety and depression. It was conducted in the outpatient cancer clinic of a government tertiary hospital in Manila wherein patients seeking consult were randomly chosen and asked to participate in the study from November 2016 until June 2017.

Study Population. Patients diagnosed with malignancy of the breast, head and neck and esophago-gastric-colon-rectum-anal with or without ostomy regardless of stage and who gave their consent were included. These sites were the top diagnoses based on the clinic's census. Those who cannot understand or speak *Tagalog* were excluded. Patients who were noted to have other psychiatric conditions and problems with cognition (e.g. those affected by brain metastases) were also excluded. Consent can be withdrawn at any time and did not result in any consequences and identities of patients were coded to maintain confidentiality. If the patient decided to withdraw his/her consent, his/her data were excluded from the study. Once screened to have symptoms of anxiety and/or depression, patients were referred to the psychiatry clinic for further evaluation and management. No follow ups were done after their consult with psychiatry.

Data Collection. Data were collected by the staff using a pre-determined data collection form after a written informed consent was obtained from study participants by the investigators.

A sample size of 380 subjects was calculated using 80% power and 0.05 significance level (95% desired precision). The confidence interval was set at 1.96 and prevalence data of affective disorders from a previous study done by De Guzman, et al. in 2013 was used (52.4%).

Data on demographic, socio-economic, behavioral, biological and health variables were also collected using the data collection form and review of medical records. Demographic data (*in Tagalog*) were filled out by the study participant while the socio-economic, behavioral, biological and health/clinical data were filled out by the researchers.

The Hospital Anxiety and Depression Scale-Pilipino Version (HADS-P) scale is composed of seven items on depression (Items 1 to 7) and seven items on anxiety (Items 8 to 14) and each item contain four (0 to 3) response options. The subscales measure anxiety and depression ranging from 0 to 21, with a higher score denoting greater number of symptoms of either anxiety or depression. Specifically, scores of 0 to 7 in each subscale corresponds to a non-case, scores of 8 to 10 corresponds to a borderline case and scores of 11 to 21 corresponds to a case. Administration of the HADS-P usually took about two to five minutes.

Analysis. STATA version 13 was used to perform statistical analysis. Descriptive statistics of the HADS-P anxiety and depression measures were generated with the aim of assessing the prevalence of anxiety and depression in the study population.

Prevalence was calculated using the following formula:

$$\text{Prevalence (\%)} = \frac{\text{Number of identified cases}}{\text{Number of tested patients}} \times 100\%$$

The descriptive statistics of the demographic, socio-economic, behavioral, biological and health variables were also compiled. Categorical variables such as age (19-40 y/o, 41-60 y/o, >60 y/o), sex (male vs. female), civil status (single, married/co-habiting, separated or widowed), educational attainment (not a college graduate vs. college graduate), employment status (employed vs. unemployed), ECOG performance status (0, 1, 2, 3, 4), BMI (underweight, normal weight, overweight, pre-obese, obese), Visual Analog Score for pain (0 for no pain, 1-3 for mild pain, 4-6 for moderate pain and 7-10 for severe pain) cancer site, cancer stage and stage of the disease management at the time of interview (newly diagnosed/pre-treatment, ongoing therapy, post therapy/surveillance) were presented as frequencies and percentages.

Multivariate analysis was employed; with anxiety, depression and mixed diagnosis (anxiety and depression) as dependent variables. Statistics were presented as odds ratio with 95% confidence intervals.

Ethical Considerations

All records were treated with strict confidentiality and numerical codes were used to protect the identities of the study participants. The investigators are all Good Clinical Practice (GCP)-certified and all collected questionnaires were kept in the research office. Only the first page of the case report form contained identifying data with subsequent pages containing coded data. Databases were de-identified using only coded numerical identifiers.

Table I. Demographic, Socioeconomic, Behavioral, Biological and Health Characteristics of cancer patients seen in an outpatient clinic of a tertiary hospital, 2016-2017

	Frequency (%) (n =381)
Age, years	
19-40	89 (23.36%)
41-60	212 (55.64%)
>60	80 (21.00%)
Sex	
Male	155 (40.68%)
Female	226 (59.32%)
Civil status	
Single	88 (23.10%)
Married	270 (70.87%)
Separated	6 (1.57%)
Widowed	17 (4.46%)
Educational attainment	
Not college graduates	301 (79.00%)
College graduates	80 (21.00%)
Employment status	
Unemployed	311 (81.63%)
Employed	70 (18.37%)
ECOG Performance Status	
0	150 (39.37%)
1	174 (45.67%)
2	47 (12.34%)
3	10 (2.62%)
BMI	
Underweight	78 (20.47%)
Normal weight	208 (54.59%)
Overweight	54 (14.17%)
Pre-Obese	29 (7.61%)
Obese	12 (3.15%)
VAS Score (Pain)	
0 (No pain)	237 (62.20%)
1-3 (Mild pain)	99 (25.98%)
4-6 (Moderate pain)	30 (7.87%)
7-10 (Severe pain)	15 (3.94%)
Cancer Site	
Breast	127 (33.33%)
Head and Neck	126 (33.07%)
Esophagus-gastric-colon-rectum-anal	128 (33.60%)
Cancer Stage	
I-II	79 (20.73%)
III-IV	302 (79.27%)
Stage of Disease Management	
Newly diagnosed/Pre-treatment	96 (25.20%)
Ongoing treatment	162 (42.52%)
Post treatment/Surveillance	123 (32.28%)
HADS-P Anxiety	36 (9.45%)
HADS-P Depression	18 (4.72%)
HADS-P Anxiety and Depression	11 (2.89%)

Patients were referred accordingly to the Department of Psychiatry and Behavioral Sciences for further management once a diagnosis of anxiety or depression was made.

Results

The total number of participants was 318 and mostly composed of females, 221(59.32%) and the 41-60-year-old age group, 212 (55.64%). Participants were mostly married, 270 (70.87%), non-college graduates, 301 (79.00%) and unemployed, 311 (81.63%). Majority of the participants also have a performance status of 1, 174 (45.67%) and none were categorized as ECOG 4, have normal weight, 208 (54.59%), and have no pain based on the VAS scoring system, 237 (62.20%). The malignancies included in the study, breast, head and neck and esophago-gastric-colon-rectum-anal with or without ostomy were almost equally distributed (33.33%, 33.07%, and 33.60 respectively), while there were more advanced stage cancers, 302 (79.27%) and more patients undergoing treatment when the study was conducted, 162 (42.52%).

The prevalence of symptoms of anxiety was 9.45% and that for depression was 4.72%. The prevalence of mixed diagnosis (both anxiety and depression) was 2.89% (Table I).

A summary of the frequency and percent distribution of anxiety, depression and mixed diagnosis among cancer patients as assessed by HADS-P were compared to the socio-demographic and clinical characteristics (Table II). The 41-60-year-old age group comprises majority of the patients with anxiety, depression and mixed diagnosis (4.46%, 3.41% and 2.10%, respectively). More females were noted to be anxious (5.25% vs 4.2%), but males scored higher in the depression and mixed diagnosis

Table II. Frequency and percent distribution of anxiety, depression and mixed diagnosis (anxiety and depression) among cancer patients seen in an outpatient clinic of a tertiary hospital according to socio-demographic and clinical characteristics using the HADS-P, 2016-2017

	HADS – P Anxiety n (%)	HADS – P Depression n (%)	HADS – P Anxiety and Depression n (%)
Age, years			
19-40	12 (3.15%)	3 (0.79%)	2 (0.52%)
41-60	17 (4.46%)	13 (3.41%)	8 (2.10%)
>60	7 (1.84%)	2 (0.52%)	1 (0.26%)
Sex			
Male	16 (4.2%)	11 (2.89%)	7 (1.84%)
Female	20 (5.25%)	7 (1.84%)	4 (1.05%)
Civil status			
Single	3 (0.78%)	3 (0.78%)	1 (0.26%)
Married	29 (7.61%)	14 (3.67)	9 (2.36%)
Separated	0 (0%)	0 (0%)	0 (0%)
Widowed	4 (1.05%)	1 (0.26%)	1 (0.26%)
Educational attainment			
Not college graduates	25 (6.56%)	14 (3.67%)	9 (2.36%)
College graduates	11 (2.89%)	4 (1.05%)	2 (0.52%)
Employment status			
Unemployed	29 (7.61%)	15 (3.94%)	11 (2.89%)
Employed	7 (1.84%)	3 (0.78%)	0 (0%)
ECOG Performance Status			
0	7 (1.84%)	1 (0.26%)	1 (0.26%)
1	13 (3.41%)	7 (1.84%)	2 (0.52%)
2	10 (2.62%)	3 (0.78%)	3 (0.78%)
3	6 (1.57%)	6 (1.57%)	5 (1.31%)
BMI			
Underweight	7 (1.84%)	7 (1.84%)	5 (1.31%)
Normal weight	19 (4.99%)	11 (2.89%)	6 (1.57%)
Overweight	5 (1.31%)	0 (0%)	0 (0%)
Pre-Obese	3 (0.78%)	0 (0%)	0 (0%)
Obese	2 (0.52%)	0 (0%)	0 (0%)
VAS Score (Pain)			
0 (No pain)	18 (4.72%)	6 (1.57%)	2 (0.52%)
1-3 (Mild pain)	11 (2.89%)	5 (1.31%)	3 (0.78%)
4-6 (Moderate pain)	2 (0.52%)	2 (0.52%)	2 (0.52%)
7-10 (Severe pain)	5 (1.31%)	5 (1.31%)	4 (1.05%)
Cancer Site			
Breast	13 (3.41%)	2 (0.52%)	1 (0.26%)
Head and Neck	9 (2.36%)	7 (1.84%)	4 (1.05%)
Esophago-gastric-colon-rectum-anal	14 (3.67%)	9 (2.36%)	6 (1.57%)
Cancer Stage			
I-II	6 (1.57%)	2 (0.52%)	2 (0.52%)
III-IV	30 (7.87%)	16 (4.2%)	9 (2.36%)
Stage of Disease Management			
Newly diagnosed/Pre-treatment	19 (4.99%)	7 (1.84%)	5 (1.31%)
Ongoing treatment	15 (3.94%)	11 (2.89%)	6 (1.57%)
Post treatment/ Surveillance	2 (0.52%)	0 (0%)	0 (0%)

Table III. Results of the Multivariate Analysis (Anxiety) of cancer patients seen in an outpatient clinic of a tertiary hospital using the HADS-P, 2016-2017

	OR (95% CI)	<i>p-value</i>
Non-college graduate	1.82 (0.80-4.14)	0.153
Performance Status (ECOG 2-3)	5.34 (2.44-11.71)	<0.001
Newly diagnosed/ pre-treatment	12.02 (2.67-54.04)	<0.001
Ongoing treatment	4.04 (0.88-18.58)	0.073

scale (2.89% and 1.84%). Those that were married, non-college graduates and unemployed scored higher in the anxiety, depression and mixed diagnosis scale. Patients who had an ECOG performance status of 1 listed more anxious and depressed patients (3.41% and 1.84%) but those that had an ECOG of 3 are more frequently categorized as both anxious and depressed (1.31%). Patients included in the study that had a normal weight were noted to be more anxious, depressed or both compared to the other groups, while majority of patients with no pain were noted to be anxious and depressed (4.72% and 1.57%). Patients who were diagnosed with esophago-gastric-colon-rectum-anal cancer with or without ostomy and those with more advanced stage were noted to be more anxious and depressed. Lastly, patients who were newly diagnosed were more anxious (4.99%) but those with ongoing therapy scored higher in the HADS-P depression (2.89%).

The significance of the main effects of the different independent variables on anxiety and depression was determined by univariate analysis (*Table III*). Mixed diagnosis (both anxiety and depression) was no longer included in the univariate analysis due to the low prevalence (2.89%). The process should begin with a univariate analysis to have an idea of the nature of strength of association of each independent variable and the outcome variable. Univariate test of any variable resulting to a $p \leq 0.25$ was considered a candidate for the multivariable model.

Since some of the variables did not reach significance level $p \leq 0.25$ in the univariate analysis, a model that included significant variables was constructed. The variables included in the model were then subjected to multivariate logistic regression analysis. Using the stepwise backward selection, the results of the analysis is shown in *Tables IV and V*. The significance level for addition of a variable in the model was $p=0.15$ and the significance level for removal of a variable in the model was $p=0.2$.

Correlates of anxiety. The multivariate analysis describes the following variables as possible correlates of anxiety (*Table IV*). Non-college graduates reported more symptoms of anxiety (OR=1.82, CI 0.80-4.14) as well as

Table IV. Results of the Multivariate Analysis (Depression) of cancer patients seen in an outpatient clinic of a tertiary hospital using the HADS-P, 2016-2017

	OR (95% CI)	<i>p-value</i>
Performance Status (ECOG 2-3)	6.14 (2.14-17.62)	<0.001
VAS Score (Moderate-Severe pain)	2.78 (0.92-8.46)	0.070

having a poorer performance status (ECOG of 2-3) (OR=5.34, CI 2.44-11.71). In terms of stage of disease management, patients that were newly diagnosed and those undergoing treatment at the time of study were likely to experience symptoms of anxiety (OR= 12.02, CI 2.67-54.04 and OR=4.04, CI 0.88-18.58, respectively).

Correlates of depression. The multivariate analysis identified two variables as possible correlates of depressive symptoms (*Table V*). These were poorer performance status (ECOG 2-3) (OR= 6.14, CI 2.14-17.62) and higher VAS score (moderate-severe pain) (OR= 2.78, CI 0.92-8.46).

Discussion

This study is one of the few researches that measure the prevalence of anxiety and depression among patients with cancer being seen in the outpatient setting. The prevalence of anxiety, depression and mixed diagnosis (anxiety and depression) (9.45%, 4.72% and 2.89%, respectively) noted in this study were lower than those cited in other studies^{2,10-13}. It was also not congruent with a study by De Guzman in 2013 involving Filipino patients with chronic diseases, which showed a prevalence of anxiety and depression of 14.3% and 26.9%, respectively². However, the said study focused on inpatients, which may have explained the higher prevalence of anxiety and depression.

Non-college graduates may influence the psychological wellbeing of patients with cancer, particularly anxiety. This finding is different from a previous study which showed that the rates of affective disorders are lower among those who receive less than and those who only received secondary education.¹⁴ Another cross-sectional study done in outpatient cancer patients in Pakistan did not include degree or level of education as a correlate of either anxiety and/or depression.¹⁵ The difference in this finding may be attributed to the significantly higher number of non-college graduates included in the study (79.00%). Another possible correlate of anxiety is stage of disease management. Patients that were newly diagnosed and undergoing chemotherapy at the time of study recorded higher symptoms of anxiety. A recent study supports this finding among newly diagnosed patients wherein anxiety and depression measured at baseline or prior to the start of therapy were 41% and 26% respectively.¹⁶ There was further increase in the

prevalence after 1 year at follow up which was not observed in this study since patients on the post treatment/ surveillance showed very low prevalence of anxiety (<1%). The presence of anxiety among patients with ongoing therapy is supported by findings in previous studies as well.^{16,17}

The performance status, one of the biological variables assessed in this study, showed a possible positive effect on anxiety and depression. A large study done among Chinese patients involving 1,217 patients also showed that poorer performance status as a significant variable for both anxiety and depression. It also mentioned that aside from poor performance status; pain, old age, and low-level education were noted as predicting factors for depression.¹⁸

The presence of depression was observed to be higher among patients with moderate-severe pain. This finding is consistent with that of several studies which supported that pain is a significant factor for depression.^{11,15, 18-21} One of the plausible reasons for this finding is that the presence of pain affects the quality of life of cancer patients leading to an increased likelihood of acquiring affective disorders, especially depression. One study by Chen even pointed out that after controlling for the effect of disease related factors, depression is more significantly correlated to patients with pain and not those with anxiety.²⁰

The prevalence of anxiety and depression was notably lower when compared to previous studies. Aside from including outpatient subjects which may explain this

Table V. Results of Univariate Analysis of cancer patients seen in an outpatient clinic of a tertiary hospital using the HADS-P, 2016-2017

	HADS – P Anxiety		HADS – P Depression	
	OR (95% CI)	p-value	OR (95% CI)	p-value
Age, years				
19-40	1		1	
41-60	0.56 (0.26-1.23)	0.147	1.87 (0.52-6.74)	0.337
>60	0.62 (0.23-1.65)	0.334	0.74 (0.12-4.52)	0.740
Sex				
Male	1		1	
Female	0.84 (0.42-1.68)	0.629	0.418 (0.16-1.10)	0.079
Civil status				
Single	1		1	
Others (Married/Live-in, Separated, Widowed)	3.59 (1.08-12.02)	0.038	1.53 (0.43-5.41)	0.510
Educational attainment				
College graduates	1		1	
Not College graduate	0.57 (0.27-1.21)	0.143	0.93 (0.30-2.90)	0.896
Employment status				
Employed	1		1	
Unemployed	0.93 (0.39–2.21)	0.862	1.13 (0.32-4.02)	0.848
ECOG Performance Status				
Good performance status (0-1)	1		1	
Poor performance status (2-3)	5.93 (2.85-12.36)	<0.001	8.40 (3.16-22.37)	<0.001
BMI				
Normal weight	1		1	
Underweight	0.98 (0.40-2.43)	0.967	1.77 (0.66-4.73)	0.258
Above normal weight (Overweight/Pre-Obese/Obese)	1.17 (0.52-2.62)	0.703	*	*
VAS Score (Pain)				
No pain	1		1	
Mild pain	1.52 (0.69-3.35)	0.298	2.05 (0.61-6.87)	0.246
Moderate-Severe pain	2.24 (0.88-5.73)	0.092	7.09 (2.26-22.24)	0.001
Cancer Site				
Esophago-gastric-colon-rectum-anal	1		1	
Breast	1.51 (0.62-3.66)	0.365	0.28 (0.06-1.36)	0.113
Head and Neck	1.65 (0.69-3.97)	0.261	1.33 (0.48-3.69)	0.584
Cancer Stage				
I-II	1		1	
III-IV	1.34 (0.54-3.35)	0.528	2.15 (0.49-9.57)	0.313
Stage of Disease Management				
Post treatment/Surveillance	1		1	
Newly diagnosed/Pre-treatment	14.93 (3.38-65.89)	<0.001	*	*
Ongoing treatment	6.17 (1.38-27.53)	0.017	*	*

* Not enough observations seen

observation; hope, optimism, mindfulness, resilience,

and spirituality in Asians may have contributed to the lower prevalence of these affective disorders.²²

The study has several limitations; firstly, the study participants were drawn only from those patients seen in our institution and that only three cancer sites were included for analysis, therefore the data gathered here are underestimates of the true prevalence of cancer patients suffering from anxiety and depression all over the country. Secondly, since some of the data gathered were based on self-reported information, the measures may not be completely accurate. Anxiety and depression are accurately diagnosed by a trained professional like a psychiatrist and the use of HADS-P is only for screening patients. Thirdly, the follow up of these patients and their respective outcomes were not included in the scope of the study. Lastly, a cross sectional study cannot establish the association between the several factors noted and symptoms of anxiety and depression even if these were significant.

Conclusion

This study is an attempt to understand symptoms of anxiety and depression among cancer patients seen in the outpatient clinics in relation to different variables like demographic, socio economic, biological and health/clinical parameters.

The findings in the study showed that indeed, numerous factors can affect one's predisposition to having anxiety or depression. This has several implications especially in managing cancer patients, as many literatures cite the intricate link between mental health problems and treatment outcomes. Therefore, the authors recommend future studies that will include patients from several institutions to further understand the complex interrelationships between anxiety and depression and different variables that may affect them. Clearly, there is a necessity to allocate resources for screening and treating affective disorders among cancer patients to improve their compliance to treatment, to achieve a more holistic approach in their management and ultimately, to improve their quality of life.

Disclosure of Conflicts of Interests

The authors declare that no competing interests exist. The hospital's Research ethics board (REB) conducted ethical and technical review of the study protocol.

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