



Original Article

ANXIETY AND DEPRESSION AMONG CANCER PATIENTS OF PAKISTAN: A CROSS-SECTIONAL SURVEY

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ABSTRACT

Background: In cancer patients, the area which mainly suffers due to depressive episodes and anxiety is their likely hood of survival and affectivity of the treatments offered them. Metastasis, treatment modalities offered, age, gender, longer duration of disease and educational status, all are significantly associated with increased risk of depression and anxiety in cancer. **Objective:** To assess the vulnerability of anxiety and depression among cancer patients of Pakistan and association of various factors for such vulnerability. **Methodology:** This was a cross sectional survey, conducted in between April 1st 2014 till June 30th 2014 at outpatient departments of Civil Hospital Karachi, Jinnah Postgraduate Medical Centre, Abbottabad Teaching Hospital and Mayo Hospital Lahore. Data collecting tools were Generalized Anxiety Disorder 7-item (GAD-7) scale and Patient Health Questionnaire-9 (PHQ-9). To determine the association of various risk factors for example, age, sex, marital status, educational status, family status and metastatic nature of disease an interview based questionnaire was used. Data was analyzed using SPSS version 16.0. **Results** The total no of study participants was 181 out of which 83(45.9%) participants were males and 98(54.1%) females. Anxiety disorders were screened to be positive in 59.7% patients while 35.4% patients were found to be vulnerable for depressive disorders. There found to be significant association of age ($p=0.008$), metastatic nature of cancer ($p=0.038$) and marital status ($p=0.004$) with the level of anxiety. Positive screening for depressive disorders was not significantly associated with any of the risk factors that were considered in the study. 96.2% positively screened patients for anxiety disorders were without clinical diagnosis and treatment for anxiety disorders. Similarly, for depressive disorders, only 6.25% of the positively screened patients were diagnosed and treated by their health care professionals for their depressive symptoms. **Conclusion** The study suggests higher prevalence rate of depression and anxiety among cancer patients of Pakistan; and many of the patients remain undiagnosed and untreated.

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INTRODUCTION

Depression and anxiety disorders are highly prevalent in patients suffering from different forms of cancer^{1, 2, 3, 4, 5}, significantly affecting patient’s quality of life. The fear of oncoming death and supposedly doomed future, worsening pain over time, lack of social support and enormous burden of treatment expenses make a cancer patient more vulnerable to anxiety episodes and depression, besides adding a generous share to the already piled up worries for him. These factors have got a direct impact on success of the treatment and patient’s survival rate.

Various risk factors have been put forward by different researches, effecting prevalence of depression and anxiety in cancer patients. Metastasis, number of treatment modalities given, age, gender, longer disease duration and increased educational experience are all significantly associated with increased incidence of depression and anxiety in cancer patients^{2, 6}.

At times, depression and anxiety remain undiagnosed by the clinicians and nursing staff while treating their primary cancers². Such an undiagnosed alteration in mood can drastically affect the outcomes of the treatment given to the patients in the long run. Therefore, it is important to address such cases promptly leading to early diagnosis of depression and anxiety in patients so that they can be properly managed by the physicians along with their treatment for cancer.

This research mainly aims at finding out the prevalence of vulnerability of depression and anxiety in cancer patients of Pakistan. The study also highlights the important risk factors responsible for developing depression and anxiety in such patients.

MATERIALS AND METHODS:

RESEARCH DESIGN: This was a cross sectional survey conducted at outpatient departments of Civil Hospital Karachi, Jinnah Postgraduate Medical Centre, Abbottabad Teaching Hospital and Mayo Hospital Lahore. The time period of the study was from April 1st 2014 till June 30th 2014.

SAMPLE SIZE: Putting prevalence of depression (p) as 12.9 %⁷, Confidence Level 95%, Margin of Error (d) 5% and $Z_{d/2}$ 1.96 in One Sample Proportion Sample Size Calculation Formula $n = (Z_{d/2})^2 pq / d^2$, Sample Size (n) was calculated as minimum of 172.

SAMPLE TECHNIQUE: The sample technique was convenient sampling.

DATA COLLECTING TOOL:

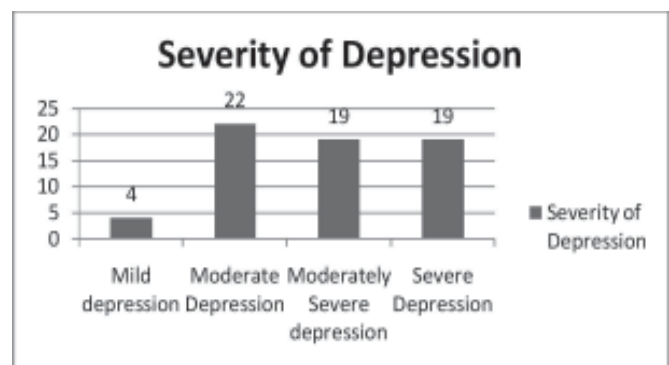
For measuring the severity of anxiety, Generalized Anxiety Disorder 7- item scale (GAD-7) was used. Initially it was developed just to diagnose Generalized Anxiety Disorders⁸ but now GAD-7 has proven to be specific and sensitive for panic, post-traumatic stress disorder and other anxiety disorders. GAD-7 comprises of seven main sections encompassing the symptoms and signs of Generalized Anxiety Disorders.

Scoring for GAD-7 was given as 0, 1, 2, and 3 to the response categories “not at all,” “several days,” “most of the days” and “almost every day”, respectively. The GAD-7 total score ranges from 0 to 21. Score ranged from 0–4 was considered as state of minimal anxiety, 5–9 as mild anxiety, 10–14 as moderate anxiety and 15–21 as severe anxiety.

For screening purpose and checking the severity of depression, Patient Health Questionnaire-9 was used. PHQ-9 offers psychologists a concise and a self-administered tool for assessing depression. It incorporates DSM-IV depression criteria along with other major depressive symptoms into a brief self-report instrument that can be used for screening and diagnostic purpose, as well as in selection and monitoring of treatment. It is highly specific and sensitive for screening depression and its severity^{9, 10}. PHQ-9 consists of nine main sections of questions about signs and symptoms of depression.

Scoring for PHQ-9 was given as 0, 1, 2, and 3 to the response categories “not at all,” “several days,” “most the days,” and “almost every day”, respectively. The PHQ-9 score ranges from 1-27. Score ranged from

GRAPH 1:



ANXIETY AND DEPRESSION, CANCER

Table I:
Socio-Demographic Profile of Cancer Patients from Out-Patient Department of Hospitals of Pakistan

	Frequency %
Sex	
Male	45.85
Female	54.14
Hospitals:	
Civil Hospital Karachi	16.57
Jinnah Postgraduate Medical Centre	19.88
Abbottabad Teaching Hospital	29.83
Mayo Hospital Lahore	33.70
Marital Status:	
Married	76.8
Unmarried	21.5
Divorcee	0.6
Others	1.1
Education:	
Illiterate	64.1
Primary education	11.0
Secondary education	12.7
Intermediate	7.2
Graduation	2.8
Masters	2.2
Duration Of Disease:	
Less than one year	47.5
1 year	25.4
2 years	13.8
3 years	5
4 years	3.9
5 years	2.8
6 years	1.1
More than 6 years	6
Metastasis:	
Yes	32
No	68
Family	
Nuclear	56.4
Joint	27.1
Extended	16.6

Table II:
Cancer Related Profile of Patients from Out-Patient Department of Hospitals of Pakistan

	Frequency %
Duration Of Disease:	
Less than one year	47.5
1 year	25.4
2 years	13.8
3 years	5
4 years	3.9
5 years	2.8
6 years	1.1
More than 6 years	6
Metastasis:	
Yes	32
No	68
Treatment Modalities Offered	
Surgery	45.9
Medicine	63.5
Chemotherapy	17.1
No of cancer patients diagnosed with anxiety and depressive disorders	
Yes	2.2
No	97.8
No of cancer patients treated for anxiety and depressive disorders	
Yes	2.2
No	97.8

1-4 was considered as minimal depression, 5-9 as mild depression, 10-14 moderate depression, 15-19 as moderately severe depression and 20-27 as severe depression¹¹.

For analyzing association of anxiety and depression with risk factors like age, sex, marital status, educational status, family status and metastatic nature of disease, an interview based questionnaire was utilized.

INCLUSION CRITERIA:

- Patients of all stages and with any type of cancer were included.
- Patients of age 10-80 years old were included
- Those who could give oral consent.

- Those who were eligible to read and or understand Urdu language.
- Those only who were aware of their cancer.
- Those who can communicate with the physicians.

EXCLUSION CRITERIA:

- Patients who were not willing to participate.
- Severe confusion.
- Patients whose brain pathology cannot be assessed.

SAMPLE COLLECTION:

A proper ethical approval for the purpose of study was taken prior, from Institutional Review Board of Dow University of Health Sciences Karachi. The total count of study participants was 181. Those who fulfilled

the above mentioned inclusion and exclusion criteria were asked for the oral consent. After oral consent, patients were asked to fill Urdu version of GAD-7 and PHQ-9 for the screening of anxiety and depressive disorders. An additional interview based questionnaire was used for assessment of risk factors for anxiety and depression. Note that all the subjects were assisted by the researchers in the filling of their questionnaires at each step. After collection, the data was and analyzed using SPSS (version 16.0). Confidentiality of every research subjects was maintained at every stage.

RESULTS:

For the given survey based research, 181 cancer patients from out-patient department of different hospitals of Pakistan were approached. Table I shows socio-demographic profile and Table II shows cancer related profile of these cancer patient.

From 181 valid participations, anxiety disorders were screened to be positive in 108 patients (59.7%) while 64 patients (35.4%) were found to be vulnerable for depressive disorder. Graph 1 shows severity of depressive disorders among cancer patients.

The most common vulnerable age group for anxiety disorders was 46-50 year old patients ($p=0.008$) while for depressive disorders the age group of 41-45 was the most vulnerable one ($p=0.674$).

For anxiety and depression, risk factors considered here were age, sex, marital status, educational status, family status and metastatic nature of disease. It was found that there is a significant association of age ($p=0.008$), metastatic nature of cancer ($p=0.038$) and marital status ($p=0.004$) with anxiety disorders. The Positive screening for depressive disorders did not reveal any significant association with the considered risk factors.

Among those who were positively screened for anxiety disorders, 96.29% did not have a clinical diagnosis and treatment for anxiety disorders. For depressive disorders, only 6.25% of the positively screened patients were diagnosed and treated by their health care professionals for their symptoms of depression.

DISCUSSION:

The overall percentage of positively screened subjects for depression (34.5%) and anxiety disorders (54.5%) is pointing towards an iceberg of such disorders among cancer patients. The vulnerability is more or less the

same when it is compared with the other studies done across different regions of Pakistan^{12, 13, 14, 15}. Slight deviations were because of difference in data collecting tool or may be due to different study population.

A slightly higher prevalence rate for anxiety and depression was found among females as compared to males which was statistically insignificant ($p=0.174$, $p=0.296$), confirming the equal prevalence of such disorders among cancer patients, as reported in other studies^{16, 17}. This might be because life threatening event of cancer takes toll on both men and women equally.

Incidence of both anxiety and depressive disorders was high among older age group. In this study, for anxiety disorders it was found to be very much significant ($p=0.008$). At this extreme of age, one should consider higher prevalence for anxiety and depression, as older age increases the duration of disease, enormous burden of treatment expenditure and higher chances for metastatic disease are evidently a huge concern¹⁷.

Metastatic nature of the disease decreases the chances for long term survival, leaving the cancer patient more vulnerable to developing anxiety and depressive symptoms. This was specifically noted in our study with anxiety disorders.

Any association of marital status with the level of anxiety was not found during the study. In general, prevalence of anxiety and depression both had no connection with marital status of the patient¹⁸.

The major concern over here is the grave situation of number of undiagnosed cases of anxiety and depression among cancer patients. These mood disorders can put hurdles in effectively treating the ongoing cancer disease and thereby hampering the patient's lifestyle as well as reducing the survival rate at large.

This study is limited only to those screened positive for anxiety and depression because the data collecting tools used for this study have their significance only in the rough estimation of anxiety and depression. Therefore the estimated prevalence for vulnerability for anxiety and depression among the cancer patients is conservative and further detailed procedures are required to confirm its accuracy.

The study is again, limited in its result, as no specification for age and gender was made while choosing the subjects for collecting data from different cities. To conclude the discussion here, such an elevated

positively screened rate among cancer patients calls for the urgent attention into the matter.

CONCLUSION:

This study highlights high prevalence rates of depression and anxiety in cancer patients of Pakistan. Which, at most of the time remain undiagnosed and untreated that could affect patients' likely hood of survival and affectivity of the treatments given.

LIMITATIONS:

The study is limited, as only four hospitals of Pakistan were approached for the data collection purpose. So, the frequency of vulnerability for anxiety and depression achieved with this cross sectional survey would be more or less closer to the actual prevalence rate if every hospital of Pakistan was approached. Patients were only screened for anxiety and depressive disorders and thus more work could have done to make a final diagnosis of these disorders into vulnerable cancer patients. Moreover, patients were analyzed for anxiety and depression after they got into their primary diseases of cancer. Might be possible they were suffering from these mood disorders prior to their primary illness of cancer.

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