



## Assessment of severity of depression in cancer patients receiving chemotherapy

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### Abstract

A cancer diagnosis is life-changing, and is a source of considerable psychological and emotional stress and it generates a higher sense of distress than non-neoplastic diseases. The purpose of this study was to analyze the prevalence of depression in cancer patients using Beck Depression Inventory II (BDI-II). We evaluated the prevalence of depression with Beck Depression Inventory (BDI) scale in 200 patients undergoing chemotherapy during our study period of 6 months. To assess the severity of depression, Beck Depression Inventory questionnaire was given to each patient in a language understandable to them. (English/Malayalam) which was voluntarily filled by the patient. Among the 200 study subjects enrolled cancer was more prevalent in the age group of 68- 77 years, majority of the patients were moderately depressed. Among the moderately depressed patients, majority were females. Higher rate of depression in females may be because women share many risk factors for depression. Providing proper patient counseling and improving their awareness about the disease and therapy can help reduce the rates of depression.

**Keywords:** cancer, depression, beck depression inventory ii, chemotherapy

### 1. Introduction

A cancer diagnosis is life-changing, and is a source of considerable psychological and emotional stress. Non-pathological sadness may be a normal response to a cancer diagnosis, however, stress beyond the coping mechanisms of patients may result in major depressive disorder [1]. Cancer generates a higher sense of distress than non-neoplastic diseases with poorer prognoses [2]. High levels of mental distress for sustained periods of time in cancer patients may lead to depression [3].

Depression leads to a poor quality of life (QOL) and compromises patient outcomes. A meta-analysis revealed that minor or major depression increases mortality rates by up to 39%, and that patients displaying even few depressive symptoms may be at a 25% increased risk of mortality. According to more than 70% oncologists and 85% patients, the impact of mental wellbeing and mood on cancer progression is important [1]. Many studies reported difference in prevalence due to assessment tools, types of patients interviewed, age groups, gender proportions, inpatient status and other factors [4].

Simple validated tools are used for screening of depression and can be completed within 10-20 minutes. Some tools that are generally used to screen depression are Beck Depression Inventory (BDI), Hospital Anxiety and Depression Scale (HADS), Center for Epidemiologic Studies Depression Scale (CESD), Patient Health Questionnaire (PHQ-9). The sensitivity and specificity of the different scales varies according to the patient's clinical condition [5]. The Beck Depression inventory (BDI-II) is one of the most commonly used screening tool for depression. This inventory was developed to rate the severity of depressive symptoms and is a self-report questionnaire. As a screening tool for depression, it has shown good psychometric qualities. The

BDI-II has been validated in many category of patients including cancer patients [6].

### 2. Method

The study was a Prospective observational study which was conducted at the Oncology Department of a tertiary care hospital in Kerala after obtaining the approval from the Institutional Ethical Committee of the hospital. Study period was 6 months and was done in 200 cancer patients undergoing chemotherapy in the hospital during this period. All subjects were provided with a brief introduction regarding the study and the confidentiality of the data. A written Informed Consent printed in their understandable language was obtained from the patient or care-giver, if the subject was unable to give the same. Patients between the age group of 18-90, both gender, IP and OP patients undergoing chemotherapy was chosen for the study. Patients with a history of previously diagnosed psychiatric disorder were excluded from the study.

The subjects filled the questionnaire sheets according to BDI. This depression parameter consisted of 21 items. For each item, the participants respondents were asked to indicate which of the 4 options (rated from 3 to 0) comes closest to describing how they have been feeling in the past week. According to these items, the scores of 0-13 indicates minimal depression, 14-19 indicates mild depression, 20-28 indicates moderate depression, 29-63 indicates severe depression (see table 1).

**Table 1:** Beck Depression Inventory Scoring

Scores	Severity of Depression
0-13	Minimal depression
14-19	Mild depression
20-28	Moderate depression
29-63	Severe depression

A subject once interviewed was not interviewed again on his/her subsequent visits to the hospital. After collecting all data, data entry and analysis was performed in Microsoft Excel.

### 3. Results

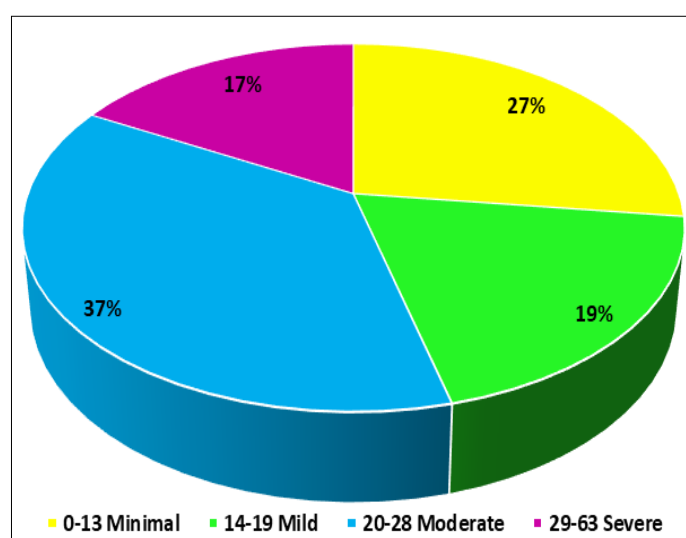
During the study, among the 200 study subjects enrolled, 37% of patients were moderately depressed, 27% were

minimally depressed, 19% were mildly depressed and 17% were severely depressed (see figure 1). Among the 38 minimally depressed patients, 65.78% were males and 34.2% were females (see table 2). Out of 54 mildly depressed patients 70.3% were males and 29.7% were females. Out of 74 moderately depressed patients 56.7% were females and 43.3% were males. Out of 34 severely depressed patients 52.9% were females and 47.1% were male.

**Table 2:** Gender Wise Distribution of Depression

Si. No	Beck Score	Grading	No. of subjects	No. of females	Percentage of females	No. of males	Percentage of males
1	0-13	Minimal	38	13	34.2	25	65.7
2	14-19	Mild	54	16	29.7	38	70.3
3	20-28	Moderate	74	42	56.7	32	43.3
4	29-63	Severe	34	18	52.9	16	47.1
Total			200	89		111	

Table 2 shows that among the moderately and severely depressed patients, majority were females.



**Fig 1:** Distribution of Depression in Cancer Patients

Among 200 subjects, 37% were moderately depressed, 27% minimal, 19% mild, 17% severely depressed.

### 4. Discussion

Depression often goes undiagnosed and untreated among cancer patients which may have a deleterious effect on not only the quality of life but also affect the course of the disease and compliance [7]. The results of this study confirm that cancer patients receiving chemotherapy do suffer from depression. From 200 patients enrolled in the study population, 17% of patients were severely depressed and 37% of patients were moderately depressed. Among the severely depressed patients, 52.9% were females. Mashhadi M A *et al.* [8] evaluated the prevalence of depression in 400 cancer patients using BDI tool and found that most of the patients with depression had mild to moderate score and females had a higher rate of depression than males. This Finding strongly agrees with our study. Higher rate of depression in females may be because women share many risk factors for depression which includes premenstrual problems, menopause, life circumstance, post-partum and pre-partum depression, and hormonal changes.

### 5. Conclusion

From 200 patients enrolled in the study population, 17% of patients were severely depressed and 37% of patients were moderately depressed. Among the severely depressed patients, 52.9% were females.

Providing proper patient counseling and improving their awareness about the disease and therapy can help reduce the rates of depression. To be efficient, depression care must be part of a comprehensive care plan, including treatment of somatic symptoms, and an adequate response to information needs and unmet needs. When possible, and if accepted by the patient, the help of a psychologist is highly appreciated. More research is still needed on factors that may cause varying rates of depression and that predict which patients are mostly at risk. An adequate collaborative care process ranging from depression screening to effective treatment has to be implemented and assessed. Longitudinal studies are still needed to understand the evolution of depressive symptoms. Randomised controlled trials should also help to differentiate between the effectiveness of types of psychosocial interventions. Newer antidepressants and stimulants also should be studied in this population.

## 6. Acknowledgement

### Conflict of interest

The Author(s) declare(s) that they have no conflicts of interest to disclose.

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## 7. References

1. Smith HR0 Depression in cancer patients: pathogenesis, implications and treatment. *Oncology letter*. 2015; 9(4):1509-1514.
2. Mishel MH, *et al*. Predictors of psychosocial adjustment in patients newly diagnosed with gynecological cancer; *Cancer Nurs*. 2004; 7:291299.
3. Linden W, *et al*; Anxiety and depression after cancer diagnosis; prevalence rates by cancer type, gender, and age; *J Affect Disord*. 2012; 141:343- 351.
4. Dhivya R, Prabavathy S, Renuka K. Depression among cancer patients - a review, *International Journal of Recent Scientific Research*. 2019; 10(3):31621-31624.
5. Dauchy S, Dolbeault S, Reich M. Depression in cancer patients; *European Journal of Cancer-Suppliment*. 2013; 11:205-215
6. Warmenhoven F, *et al*; The Beck Depression Inventory (BDI-II) and a single screening question as screening Tools for depressive disorder in Dutch advanced cancer patients; *Support Care in Cancer*. 2012; 20(2):319-324.
7. Walker J, *et al*; Prevalence of depression in adults with cancer: A systematic review; *Ann Oncol*. 2013; 24:895- 900.
8. Mashhadi MA, Shakira M, Zakeri Z. Evaluation of Depression in Patients with Cancer in South of Iran; *Iranian Journal of Cancer Prevention*. 2013; 6(1):12-16.