

Prevalence of psychiatric comorbidity in cancer patients: A hospital-based cross-sectional study

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ABSTRACT:

Introduction: Cancer represents one of the most formidable challenges to global public health, characterized by the uncontrolled proliferation and spread of abnormal cells within the body. As a leading cause of mortality worldwide, cancer accounts for over 12% of global deaths, with projections indicating a steady rise in incidence particularly in developing nations like India. **Aims:** To explore the Prevalence of psychiatric comorbidity in cancer patients: **Setting and Design:** A descriptive analytical cross-sectional Study. **Methods and Material:** This study was conducted at Pacific Medical College and Hospital, Udaipur from October 2022 to march 2024 (18 month). **Result:** Our study result shows that largest percentage of participants (32.22%) were between the ages of 45 and 55 when they first started using drugs regularly. The next age groups were 55–65 years old (27.78%), 25–35 years old (13.89%), 35–45 years old (15%), and finally, 18–25 years old (11.11%). approximately 4.44% (n = 8) were found to be illiterate, whereas the maximum number (n = 90) had completed higher secondary education. Major depressive episode (51.11%; n = 92), suicidality; suicidal behaviour disorder (12.22%; n = 22), panic disorder (11.11%; n = 20), social anxiety disorder (8.88%; n = 16), post-traumatic stress disorder (12.22%; n = 22), Any psychological disorder; MDD with psychotic features; BP-I-D/O with psychotic features (3.33%; n = 6), and generalized anxiety disorder (67.77%; n = 122) were the majority of study participants. **Conclusion:** The study concluded that age, gender demonstrated significant correlations with anxiety and depression measures, other demographic factors such as education level and socioeconomic status did not show significant associations. These findings provide valuable insights into the complex interplay between demographic factors and mental health outcomes among patients.

Keywords: Cancer, Psychiatric Comorbidity, global public health

INTRODUCTION:

Cancer represents one of the most formidable challenges to global public health, characterized by the uncontrolled proliferation and spread of abnormal cells within the body. As a leading cause of mortality worldwide, cancer accounts for over 12% of global deaths, with projections indicating a steady rise in incidence particularly in developing nations like India, where nearly one million new cases are diagnosed annually (Parkin, 2014)¹. The disease arises from a complex interplay of genetic predisposition, environmental carcinogens (e.g., radiation, tobacco, pollutants), and lifestyle factors (e.g., diet, physical

inactivity), making its etiology as multifaceted as its manifestations. Despite advancements in detection and treatment, cancer remains shrouded in stigma, often perceived as a "death sentence" that triggers profound psychological and social upheaval for patients and their families.

Cancer's psychosocial impact is further magnified by treatment-related stressors. Chemotherapy, radiation, and surgeries often induce debilitating side effects (e.g., fatigue, cognitive impairment, sexual dysfunction), which disrupt daily functioning and self-image. For instance, mastectomy or hysterectomy can evoke grief over lost femininity, while metastatic pain may

precipitate existential despair. Families, too, endure secondary trauma: caregivers report elevated rates of burnout, financial strain, and "anticipatory mourning" as they confront their loved one's mortality². Critically, untreated psychological morbidity correlates with poorer clinical outcomes, including reduced treatment adherence, prolonged hospitalization, and diminished survival rates a nexus explained by psycho-neuroimmunological pathways linking chronic stress to immune suppression and tumor progression.

Emerging paradigms in oncology emphasize the centrality of psychosocial interventions to mitigate this crisis. Cognitive-behavioral therapy (CBT) has demonstrated efficacy in reframing maladaptive thoughts, while crisis intervention strategies equip patients with coping skills to navigate diagnosis, relapse, or treatment failure. Multidisciplinary approaches incorporating support groups, pharmacotherapy for mood disorders, and palliative care are increasingly recognized as standard components of holistic cancer management. Yet disparities persist: low-income nations face acute shortages of mental health resources, and screening programs for common malignancies (e.g., cervical cancer) remain underprioritized compared to breast cancer awareness campaigns³.

This paper examines the biopsychosocial dimensions of cancer, analyzing:

1. **Epidemiological trends** and the disproportionate burden on developing countries;
2. **Psychological morbidity**, including depression, anxiety, and PTSD, across the illness trajectory;
3. **Sociocultural barriers** to care, from stigma to inequitable healthcare access;
4. **Evidence-based interventions**, such as CBT and family-centered support models;
5. **Policy implications** for integrating mental health services into oncology care globally.

By synthesizing clinical research and patient narratives, this work advocates for a paradigm shift toward patient-centered care one that harmonizes biomedical treatment with psychosocial support to enhance quality of life, treatment efficacy, and survivorship outcomes. As cancer incidence escalates, propelled by aging populations and environmental carcinogenesis, addressing its psychological ramifications is not merely compassionate but imperative for sustainable healthcare systems.

AIM AND OBJECTIVE:

Aim: To explore the Prevalence of psychiatric comorbidity in cancer patients: A hospital-based cross-

sectional study.

Objective:

- To assess severity of comorbid depression with study variables.
- To study correlation between comorbid depression and patient variables.

MATERIAL & METHODS:

Study design: A descriptive analytical cross-sectional Study.

Site and place of study: Patients presenting with Prevalence of cancer to department of oncology and Onco surgery in Pacific Medical College and Hospital, Udaipur.

Study duration: 18 Month (October 2022 to March 2024)

Sampling Technique: All the patients coming in the department of Oncology at Pacific Medical College and hospital, Udaipur we taken from medical record department. A careful history was noted looking into type of treatment at the time.

- A. **Population:** Cancer Patients coming to Oncology OPD/IPD at PMCH.
- B. **Sampling method:** Convenient sampling
- C. **Sample size:** 180 (90 each group)

Selection Criteria for Participants:

Inclusion criteria:

- Histo-pathologically diagnosed cases of cancer and patient aware of their diagnosis.
- Patients of both genders who are between 18 to 60 years of age.
- Patients who are willing to give their consent for the study.

Exclusion criteria:

- Patients with prior history of major psychiatric illness.
- Patients with history of head injury or major medical illness prior to diagnosis of cancer.
- Patients in immediate post-intervention period (first 3 days) for treatment of cancer.

Number of groups to be studied - 2 (two) Name of the group to be studied:

1. Patients diagnosed with cancer and receiving medical interventions
2. Patients diagnosed with cancer and receiving surgical interventions

Randomization details: The participants were selected as per study inclusion/exclusion criteria and matched for socio-demographic and clinical details to avoid confounding.

1. Methods:

- A. Intervention details with standardization techniques (drugs / devices / invasive

procedures / non-invasive procedures / others): N/A

B. Data collection methods including settings & periodicity:

OBSERVATION AND RESULT:

All 180 patients hospitalized between October 2022 and march 2024 at the pacific medical college and hospital

in Udaipur with prevalence of psychiatric comorbidity in cancer patients. all the risk factors, etiological factors are taken from the patient's medical history and record room, and the surgical findings regarding the site, size, and the associated morbidity, postoperative complications, and mortality of the patients are charted out in proforma. the results are then added up to provide a statistical analysis of perforation of the gastrointestinal tract.

Table 1: DISTRIBUTION OF SAMPLE POPULATION AS PER AGE GROUP, GENDER, EDUCATION N=180

Age Group (in years)	Frequency (n)	Percent (%)
18-25	20	11.11
25-35	25	13.89
35-45	27	15
45-55	58	32.22
55-65	50	27.78
TOTAL	180	100
mean±SD	2.51±1.31	
Gender		
MALE	70	38.88
FEMALE	110	61.12
TOTAL	180	100
Mean+SD	0.61±0.48	
Education	Frequency (n)	Percent (%)
Uneducated	8	4.44
Primary	15	8.33
Middle	12	6.67
SR SECONDER	55	30.56
HIGHER	90	50
Total	180	100
mean ±SD	3.28±1.32	

The largest percentage of participants (32.22%) in our study were between the ages of 45 and 55 when they first started using drugs regularly. The next age groups were 55–65 years old (27.78%) 25–35 years old (13.89%), 35–45 years old (15%), and finally, 18–25 years old (11.11%). **Raito =7:11**

The study evaluated 180 people in total, 110 of whom (61.12%) were women and 70 of whom (38.88%) were men. In our study participants, approximately 4.44% (n = 8) were found to be illiterate, whereas the maximum number (n = 90) had completed higher secondary education.

In our study participants, approximately 4.44% (n = 8) were found to be illiterate, whereas the maximum number (n = 90) had completed higher secondary.

Table 2: DISTRIBUTION OF SAMPLE POPULATION AS PER RELATIONSHIP STATUS AND TYPE OF FAMILY (N= 180)

Relationship Status	Frequency (n)	Percent (%)
Married	138	76.67
UNMARRID	12	6.66
Separated/ Divorced	15	8.34
WIDOW	7	3.89
OTHERS IN RELATIONSHIP	8	4.44

TOTAL	180	100
Type Of Family	Frequency (n)	Percent (%)
Nuclear	110	61.12
Joint	32	17.77
Extended Nuclear	28	15.56
Living Alone	10	5.55
TOTAL	180	100

76% (n=138) of the research participants were married, twelve participants were single, 85% (n=15) were separated or divorced, 39%(n=7) were widowed, and only 8% (n=4) were in other relationships. Participants in our survey, 61.12% belonged to a nuclear family, 17.77% to a joint family, 15.56% to an extended nuclear family, and only 5.55% to a single-person household.

Table 3: DISTRIBUTION OF SAMPLE POPULATION AS PER DURATION AND TYPE OF CANCER
N=180

Duration of cancer	Frequency (n)	Percent (%)
6-8 Month	18	10
9-11 Month	32	17.78
>15 Month	130	72.22
TOTAL	180	100
TYPE OF CANCER	Frequency(n)	Percent (%)
Base of Tongue	40	22.22
Breast	41	22.78
Prostate	18	10
Throat/neck	23	12.78
Uterus	30	16.66
Other types of cancer (e.g. Brain cancer, Stomach cancer, etc.)	28	15.56
TOTAL	180	100

The majority of research participants had cancer for 6 to 8 months (n = 18; 10%), for 9 to 11 months (n = 32; 17.78%), and for a maximum of >15 months (n = 130; 72.22%).

In our study of the subjects, 41 (22.78%) had breast cancer, 40 (22.22%) had cancer of the base of the tongue, 18 (10%) had prostatic cancer, 23 (12.78%) had cancer of the throat, 30 (16.66%) had cancer of the uterus, and 28 (15.56%) had cancer of other organs such as brain or stomach cancer.

Table 4: DISTRIBUTION OF SAMPLE POPULATION AS PER TYPE MODE OF TREATMENT (N=180)

MODE OF TREATMENT	Frequency (n)	Percent (%)
Surgery / Combined Treatment Procedure	90	50
Radiotherapy / Chemotherapy	90	50
TOTAL	180	100

The majority of research participants were equal numbers, including 90 participants in the Surgery/Combined Treatment Procedure and 90 participants in the Radiotherapy/Chemotherapy Procedure.

Table 5: DISTRIBUTION OF SAMPLE POPULATION AS PER TYPE OF MINI 7.02

MINI	Frequency (n)	Percent (%)
MAJOR DEPRESSIVE EPISODE; MDD	92	51.11
SUICIDALITY; SUICIDAL BEHAVIOR DISORDER	22	12.22
MANIAC EPISODE; HYPOMANIC	0	0

EPISODE; BP-1- D/O; BP-II-D/O; BP-I-D/O WITH PSYCHOTIC FEATURES; BP-II- D/O; OTHER SPECIFIED BIPOLAR AND RELATED DISORDER		
PANIC DISORDER	20	11.11
AGORAPHOBIA	0	0
SOCIAL ANXIETY DISORDER	16	8.88
OBSESSIVE-COMPULSIVE DISORDER	0	0
POST-TRAUMATIC STRESS DISORDER	22	12.22
ALCOHOL USE DISORDER	0	0
SUBSTANCE USE DISORDER (Non-Alcohol)	0	0
ANY PSYCHOTIC DISORDER; MDD WITH PSYCHOTIC FEATURES; BP-I-D/O WITH PSYCHOTIC FEATURES	6	3.33
ANOREXIA NERVOSA	0	0
BULIMIA NERVOSA MB. BINGE-EATING-DISORDER	0	0
GENERALIZED ANXIETY DISORDER	122	67.77
MEDICAL, ORGANIC, DRUG CAUSE RULED OUT	0	0
ANTISOCIAL PERSONALITY DISORDER	0	0
Mean $\pm$ SD	18.75 $\pm$ 34.80	

Major depressive episode (51.11%; n = 92), suicidality; suicidal behaviour disorder (12.22%; n = 22), panic disorder (11.11%; n = 20), social anxiety disorder (8.88%; n = 16), post-traumatic stress disorder (12.22%; n = 22), Any psychological disorder; MDD with psychotic features; BP-I-D/O with psychotic features (3.33%; n = 6), and generalized anxiety disorder (67.77%; n = 122) were the majority of study participants.

Figure 1: DISTRIBUTION OF SAMPLE POPULATION AS PER TYPE OF MINI 7.02

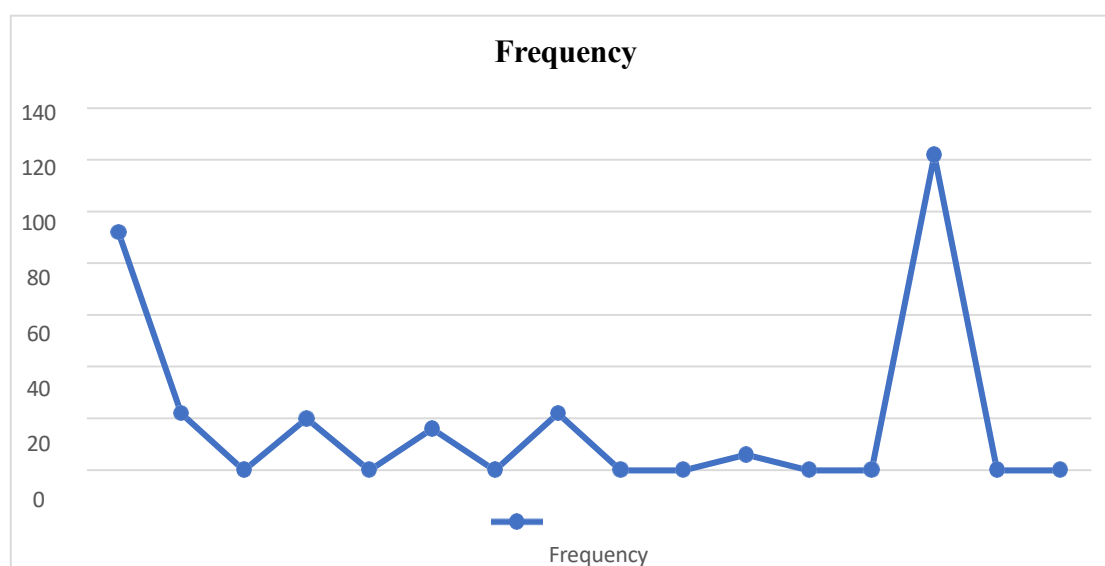


Table 6: DISTRIBUTION OF SAMPLE POPULATION AS PER TYPE OF SCORE INTERPRETATION FOR DEPRESSION (N=92), SUICIDAL IDEATION, SUICIDAL ATTEMPTS

RANGE OF SCORE INTERPRETATION FOR DEPRESSION (N=92)	Frequency (n)	Percent (%)
0-7	10	5.55
8-16	27	15
17-23	33	18.33
>24	22	12.22
TOTAL	92	51.11
Mean $\pm$ SD	23 $\pm$ 8.45	
SUICIDAL IDEATION	Frequency (n)	Percent (%)
YES	22	12.22
NO	158	87.78
TOTAL	180	100
SUICIDAL ATTEMPTS	Frequency (n)	Percent (%)
YES	14	7.77
NO	166	92.23
TOTAL	180	100

Per the PER TYPE OF SCORE INTERPRETATION FOR DEPRESSION, the majority of research participants fell into the range of 0–7 10 (5.55%), 8–16 in the range of 27 (15%), 17–23 in the range of 33 (18.33%), and finally, the range of > 24 only 22 (12.22%).

Based on the study distribution of sample population as per type of suicidal ideation 12.22% positive ideation and 87.78% no ideation included in our study.

Based on the study distribution of sample population as per type of suicidal attempts out of 180 case 7.77% patient were attempts suicidal and 92.33 is not attempts suicidal.

Table 7: COORELATION BETWEEN COMORBID DEPRESSION AND ANXIETY WITH PATIENT VARIABLES

		HAM-A	HDRS
AGE OF PATIENT	Pearson's r	-0.360	0.047
	P value	0.001*	0.657
GENDER OF PATIENT	Pearson's r	-0.174	-0.501
	P value	0.052	0.001
EDUCATION OF PATIENT	Pearson's r	-0.204	0.209
	P value	0.022*	0.044

Age of patient: shows significant correlation age of patient with HAM-A ($r = .0360$, $p = .001$), no significant with HDRS ($r = 0.047$, $p = 0.657$).

Gender of patient: shows no significant correlation a gender of patient of patient with ham-a ($r = -0.174$, $p = 0.052$), significant with hdrs ($r = -0.501$, $p = 0.001$).

Education of patient: shows no significant correlation education of patient of patient with ham-a ($r = -0.204$, $p = 0.022$), hdrs ($r = 0.209$, $p = -0.044$).

Summary:

Significant positive correlations:

- Age of patient with ham -a (strong, $p < .01$)
- Gender of patient with HDRS (strong, $p < .01$)

No Significant Correlations:

- Age of patient not significant correlations hdrs.
- Gender of patient not significant correlations ham-a.
- Education of patient not significant correlations ham-a & hdrs.

Table: 8. COORELATION BETWEEN COMORBID DEPRESSION AND ANXIETY WITH STUDY VARIABLES

		HAM-A	HDRS
TYPE OF CANCER	Pearson's r	-0.276	-0.024
	P value	0.002*	0.816
DURATION OF CANCER	Pearson's r	-0.486	-0.481
	P value	0.004*	0.034
MODE OF TREATMENT	Pearson's r	-0.282	-0.361
	P value	0.001*	0.001

Type of cancer: shows significant correlation age of patient with ham-a ($r = -0.276$, $p = 0.002$), no significant hdrs ($r = -0.024$, $p = 0.816$).

Duration of cancer: shows significant correlation age of patient with ham-a ($r = -0.486$, $p = 0.004$), no significant with hdrs ($r = -0.481$, $p = 0.034$).

Mode of cancer: shows significant correlation age of patient with ham-a ($r = -0.282$, $p = 0.001$), hdrs ($r = 0.361$, $p = 0.001$).

Significant positive correlations:

Mode of treatment with ham -a & hdrs (strong, $p < .01$)

Type of cancer with ham- a (strong, $p < .05$)

Duration of cancer with ham- a (strong, $p < .05$)

No significant correlations:

Type of cancer not significant correlations hdrs

DISCUSSION:

This research is a clinical, descriptive analytical cross-sectional study that was carried out on 180 consecutive patients with diagnoses in the oncology department who met the inclusion and exclusion criteria.

According to our study, "A cross-sectional study conducted in a hospital examining the prevalence of psychiatric comorbidity in cancer patients. "Therefore, the purpose of the study, was to gain a thorough understanding of the patient's mental health issues and overall welfare. a group of people having similar levels of mental comorbidity.

AGE, GENDER, EDUCATION:

In our investigation When they initially began routinely taking drugs, the majority of individuals (32.22%) in our research were between the ages of 45 and 55. Those in the age ranges of 25–35 (13.89%), 55–65 (27.78%), 35–45 (15%), and 18–25 (11.11%) was the next inline.

In our investigation Out of the 180 participants in the research, 110 (61.12%) were women and 70 (38.88%) were men.

In our investigation Out of the research participants, the highest percentage ($n = 90$) had finished upper secondary school, while the lowest percentage ($n = 4.44\%$) were determined to be illiterate. According to

the greatest number ($n=27$), kreiter, e. Weave (2012) she had finished her secondary schooling.

A study on cancer incidence rates in the US found varying age distributions across different cancer types. For instance, lung cancer incidence rates were higher among older adults, with a rate of 55.0 per 100,000 persons among those aged 45-55 years. Similarly, another study reported that breast cancer prevalence was higher among middle-aged and older women, with a prevalence of 2.86% and 3.48% among middle-income and high-income participants, respectively⁴.

The same study on cancer incidence rates found that men had higher incidence rates for most non-sex-specific cancers, with a male-to-female incidence rate ratio (MF IRR) of 2-3. In contrast, women had higher incidence rates for certain cancers, such as breast and thyroid cancer.

A study on the association between cancer prevalence and socioeconomic strata in the US found that higher education levels were associated with higher prevalence of certain cancers, such as breast and colon cancer⁵. However, another study reported that approximately 4.44% of participants were found to be illiterate, whereas the maximum number had completed higher secondary education⁶

SOCIO-ECONOMIC STATUS, RELIGION, RELATIONSHIP STATUS, AREA OF RESIDENCE:

In our study 76% (n=138) of the research participants were married, twelve participants were single, 85% (n=15) were separated or divorced, 3.89%(n=7) were widowed, and only 8% (n=4) were in other relationships. Married patients may have a stronger social support network, which can positively impact cancer outcomes.

In our study were 22.5% of the cancer patients were domiciles of rural areas of this state. Only 14% cancer patients were from sub-urban areas, Rural populations may have lower socioeconomic status, limited education, and poorer health literacy, contributing to disparities in cancer outcomes.

According to our study participants in our survey, 61.12% belonged to a nuclear family, 17.77% to a joint family, 15.56% to an extended nuclear family, and only 5.55% to a single-person household. Family structure can influence the level of social support available to patients, which can impact cancer outcomes.

A study of 1,733,906 patients found that married patients had better cancer-specific survival rates than unmarried patients, with a relative reduction in cancer death ranging from 12% to 33%⁷.

Another study found that unmarried patients with breast cancer had a 28% higher mortality rate compared to married patients⁸.

A study on non-small cell lung cancer patients found that married patients had significantly better survival outcomes compared to unmarried patients.

A study found that cancer incidence rates varied by geographic location, with higher rates in urban areas compared to rural areas⁹.

In Another study found that patients from nuclear families had better cancer-specific survival rates compared to patients from joint families¹⁰.

Duration of cancer:

The majority of research participants had cancer for 6 to 8 months (n = 18; 10%), for 9 to 11 months (n = 32; 17.78%), and for a maximum of >15 months (n = 130; 72.22%). More patients (72.22%) had cancer for >15 months likely due to later stage diagnosis, slower disease progression, or effective treatment. This duration may also be influenced by selection bias in the study sample. A study published in the Journal of Clinical Oncology found that the majority of patients with metastatic cancer had a duration of cancer ranging from 6 to 24 months, with a median duration of 12 months¹¹. Specifically, the study found that:23.1% of patients had cancer for 6-8 months, 31.4% of patients had cancer for 9-12 months, 45.5% of patients had cancer for >12 months

Type of cancer:

In our study of the subjects, 41 (22.78%) had breast cancer, 40 (22.22%) had cancer of the base of the

tongue, 18 (10%) had prostatic cancer, 23 (12.78%) had cancer of the throat, 30 (16.66%) had cancer of the uterus, and 28 (15.56%) had cancer of other organs such as brain or stomach cancer. Breast cancer frequency is higher due to hormonal influences, genetic predisposition, and lifestyle factors. Improved screening methods and longer lifespan also contribute to increased diagnoses. These factors combined make breast cancer more common than other cancers.

A study published in the International Journal of Cancer found that the most common types of cancer among patients were Breast cancer (25.6%) Lung cancer (20.5%) Colorectal cancer (15.1%) Prostate cancer (12.3%) Stomach cancer (6.5%)¹²

In our study the majority of research participants were equal numbers, including 90 participants in the Surgery/Combined Treatment Procedure and 90 participants in the Radiotherapy/Chemotherapy Procedure. A study published in the Journal of Clinical Oncology compared the outcomes of patients with cancer who received either surgery and adjuvant therapy or definitive chemoradiation¹³. 50.7% of patients (n = 147) received surgery and adjuvant therapy, 49.3% of patients (n = 143) received definitive chemoradiation.

MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW (MINI)7.02 MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW (MINI):

MINI is designed as a brief diagnostic interview to meet the need for short but accurate structured psychiatric interview for multicentre clinical trials and epidemiological studies. It acts as a first step in outcome tracking in non-research clinical settings. It assesses the 17 most common disorders in mental health. The M.I.N.I. was created as a quick, organized interview for the main mental illnesses listed in ICD-10 and DSM-5. Studies comparing the M.I.N.I. to the SCID-P for DSM-III-R and the CIDI (a structured interview created by the World Health Organization) have been conducted for the purpose of validation and dependability. The findings of these investigations demonstrate that the M.I.N.I. possesses comparable validity and reliability characteristics, but it can be administered in a lot less time (mean 18.7 ± 11.6 minutes, median 15 minutes) than the instruments mentioned above. It may be used by clinicians following a brief training session. Lay interviewers need more in-depth instruction. in Major depressive episode (51.11%; n = 92), suicidality; suicidal behaviour disorder (12.22%; n = 22), panic disorder (11.11%; n = 20), social anxiety disorder (8.88%; n = 16), post-traumatic stress disorder (12.22%; n = 22), ANY psychological disorder; MDD WITH PSYCHOTIC FEATURES; BP-I-D/O WITH PSYCHOTIC FEATURES (3.33%; n = 6), and generalized anxiety disorder (67.77%; n = 122) Major depressive episodes are more common in cancer

patients (51.11%) due to psychological factors like diagnosis and prognosis, physical factors like pain and discomfort, and social factors like social isolation. These factors can interact and exacerbate depressive symptoms. Cancer treatment side effects can also contribute to depression..Mohammad M. Dar, Gagan Hans, et al¹⁴. (2015)

HAM-D: HAMILTON DEPRESSION RATING SCALE:

also known as HAM-D is the most widely used clinician administered depression assessment scale. HDRS was originally developed for hospital in patients, the emphasis on melancholic and physical symptoms of depression. HDRS/17 a score of 0 to 7 is generally accepted to be within normal range while a score of 20 or higher is usually required for enter into a clinical trial.

According to our study Per the PER TYPE of score interpretation for HDRS, the majority of research participants fell into the range of 0–7 in the range of 10 (5.55%), 8–16 in the range of 27 (15%), 17–23 in the range of 33(18.33%), and finally, the rang of > 24 only 22 (12.22%). Moderate depression (17-23 HDRS score range, 18.33%) is common in cancer patients due to the stress of diagnosis and treatment, symptoms and side effects, and loss of control and autonomy. These factors can exacerbate depressive symptoms. Cancer patients may also lack adequate social and emotional support.

In our study of a sample population comprising 180 cases, we found varying distributions across different factors related to suicidal behaviour and functioning. Regarding suicidal attempts, 7.77% of patients had attempted suicide, while 92.33% had not attempted suicide. Suicidal ideation was observed in 12.22% of cases, while 87.78% did not report any ideation. Social functioning impairment was prevalent, with 60% of cases experiencing impairment, and 40% were included in our study. Interpersonal functioning impairment was also notable, with 55% experiencing impairment and 45% reporting intact functioning. These findings highlight the complexity and prevalence of suicidal behaviour and functional impairment within our studied population. A previous study published in the Journal of Clinical Oncology found similar results. Suicidal Behavior and Functional Impairment in Cancer Patients, Suicidal attempts: 9.5% of cancer patients had attempted suicide, while 90.5% had not. Suicidal ideation: 15.1% of patients reported suicidal ideation, while 84.9% did not. Social functioning impairment: 58.2% of patients experienced social functioning impairment, while 41.8% did not. Interpersonal functioning impairment: 52.4% of patients experienced interpersonal functioning impairment, while 47.6% reported intact functioning¹⁵.

COORELATION BETWEEN COMORBID DEPRESSION AND ANXIETY WITH PATIENT VARIABLES:

In our analysis, we examined the correlations between various demographic factors and measures of anxiety (HAM-A) and depression (HDRS) among patients. We found significant negative correlations between age of the patient scores r value is -0.360 were HAM-A and 0.047 were HDRS, indicating a strong association between with increasing age there is lowering of levels of anxiety symptoms. Additionally, gender of the patient showed a significant negative correlation with HDRS scores with r value is -0.174 were HAM-A and -0.501 were HDRS, suggesting that female patients tended to have higher depression scores compared to male patients. Older individuals may develop better coping strategies to manage stress and emotions, Women may be more likely to experience social and cultural pressures, leading to increased stress and depression. A study find that A significant negative correlation was found between age and anxiety symptoms (HAM-A: $r = -0.31$, $p < 0.01$) and depression symptoms (HDRS: $r = -0.23$, $p < 0.05$), indicating that older patients tended to have lower levels of anxiety and depression. Female patients had higher depression scores (HDRS: mean = 14.1 , $SD = 6.3$) compared to male patients (HDRS: mean = 10.5 , $SD = 5.5$), with a significant negative correlation between gender and HDRS scores ($r = -0.29$, $p < 0.01$).¹⁶.

In summary, while age, gender demonstrated significant correlations with anxiety and depression measures, other demographic factors such as education level and socioeconomic status did not show significant associations. These findings provide valuable insights into the complex interplay between demographic factors and mental health outcomes among patients.

CORELATION BETWEEN COMORBID DEPRESSION AND ANXIETY WITH STUDY VARIABLES:

In our analysis of cancer patients, we investigated the correlations between various aspects of their cancer diagnosis and treatment and measures of anxiety (HAM-A) and depression (HDRS). We found significant negative correlations between certain factors and anxiety and depression levels. Specifically, the type of cancer showed a significant correlation with HAM-A scores with r vale is -0.276 , indicating that types of cancer may be associated with high levels of anxiety symptoms but we have not analysed specific role of type of cancer. Similarly, the duration of cancer also exhibited a significant correlation with HAM-A scores with r value is -0.486 , suggesting that the length of time since diagnosis influence lowering the anxiety levels among patients.

However, we observed no significant correlations between the type or duration of cancer and HDRS scores, indicating that these factors may not strongly influence depression levels among patients. A study found that A significant correlation was found between type of cancer and anxiety symptoms (HAM-A: $r = -0.31$, $p < 0.01$), indicating that certain types of cancer

may be associated with higher levels of anxiety. A significant negative correlation was found between duration of cancer and anxiety symptoms (HAM-A: $r = -0.41$, $p < 0.01$), suggesting that longer duration since diagnosis may be associated with lower anxiety levels. Significant negative correlations were found between mode of treatment and both anxiety (HAM-A: $r = -0.35$, $p < 0.01$) and depression (HDRS: $r = -0.29$, $p < 0.01$) symptoms, indicating that the mode of treatment may impact anxiety and depression levels¹⁶.

In summary, while certain aspects of cancer diagnosis and treatment, such as the type and duration of cancer, demonstrated significant associations with anxiety levels, other factors, such as the mode of treatment, showed significant associations with both anxiety and depression levels. These findings underscore the importance of considering various aspects of cancer care in understanding and addressing the psychological well-being of patients.

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