



PREVALENCE OF DEPRESSION, ANXIETY, AND STRESS AMONG FEMALE CANCER PATIENTS IN A TERTIARY CARE HOSPITAL IN A METROPOLITAN CITY: A CROSS-SECTIONAL STUDY

Community Medicine

Dr. Rajesh K Bandgar*

Junior Resident Doctor, MD Community Medicine, Grant Government Medical College, Mumbai. *Corresponding Author

Dr. Pallavi Uplap

Associate Professor, Department of Community Medicine, Grant Government Medical College, Mumbai.

Dr. Sushmita

Junior Resident Doctor, MD Community Medicine, Grant Government Medical College, Mumbai.

ABSTRACT

A cancer diagnosis is widely regarded as one of the most stressful life events, often precipitating anxiety and depression due to its profound emotional burden. Female cancer patients face unique challenges as they navigate both the physical manifestations of the disease and its psychological toll. Understanding the prevalence and interplay of socio-demographic factors with depression, anxiety, and stress in this population is critical for informing effective interventions and improving patient care. **Methods:** A cross-sectional hospital-based study was conducted in the Oncology Outpatient Department of a tertiary care hospital in Maharashtra from July to August 2023. Using non-probability convenience sampling, 204 female cancer patients were included. Eligibility criteria required females aged 18 and above, diagnosed at least two weeks prior, while exclusions included pre-existing psychiatric illness, critical conditions, or co-morbidities. After ethics approval and informed consent, data were collected via a semi-structured questionnaire and the DASS-21 scale. It was entered into MS Excel and analyzed using SPSS Version 26. **Results:** Out of 204 female cancer patients, most (61.3%) were aged 40-59, married (92.2%), and employed (64.7%). Anxiety (32.8%) was most prevalent among cancer patients, followed by depression (28.4%) and stress (24%). Moderate to severe depression was observed in 9% of patients, while 22% experienced extremely severe anxiety, and 11% had moderate stress. Age, education, employment status, marital status, and socio-economic class demonstrated statistically significant associations with depression, anxiety, and stress. **Conclusion:** Female cancer patients experience significant psychological distress, with anxiety being most prevalent. Socio-demographic factors influence depression, anxiety, and stress, emphasizing the need for targeted psychosocial interventions and holistic cancer care approaches.

KEYWORDS

Depression, Anxiety, Stress, Cancer

INTRODUCTION

Cancer has become the second leading cause of mortality worldwide. It is responsible for an estimated 9.6 million deaths in 2018. Globally, about 1 in 6 deaths is due to cancer. ⁽¹⁾ The incidence of cancer cases in Maharashtra was reported at 116,121 in 2020, with projections indicating a rise to 130,465 cases by 2025. ⁽²⁾

A cancer diagnosis profoundly impacts patients, disrupting their lives and those of their families. Due to its life-threatening nature, cancer induces severe psychological and emotional stress, with anxiety and depression observed in nearly two-thirds of affected individuals. Female cancer patients, in particular, face unique challenges as they navigate both the disease's physical burden and its psychological toll. ^(3,4)

Anxiety and depression are among the most prevalent psychiatric disorders in cancer patients, often exacerbated by stress. Psychological distress can further impact treatment adherence, as patients with untreated anxiety or depression may lack motivation, leading to reduced compliance with medications and unhealthy lifestyle choices. The consequences of untreated psychological disorders include impaired decision-making regarding treatment, non-compliance, prolonged recovery times, and intensified pain. These effects underscore the need for early psychological intervention to improve treatment outcomes and overall well-being. ⁽⁵⁾

The Indian Council of Medical Research (ICMR) projected 14.5 lakh new cancer cases in 2016, with anticipated increases in subsequent years. ⁽⁶⁾ As the cancer burden rises, so does the prevalence of psychological distress among patients. Despite extensive research, limited studies have explored depression, anxiety, and stress prevalence among female cancer patients in India. Given the distinct psychosocial challenges faced by women with cancer, it is crucial to conduct further research to optimize mental health interventions and improve patient outcomes.

This study aims to address the psychological challenges faced by female cancer patients, focusing on depression, anxiety, and stress prevalence. By identifying contributing socio-demographic factors and psychological patterns, the findings can inform effective interventions to support mental well-being among female cancer patients and enhance their overall clinical outcomes.

MATERIAL AND METHODS

This hospital-based cross-sectional study was conducted in the

Oncology Outpatient and Inpatient Department of a tertiary care hospital in Maharashtra, a metropolitan city, over three months from April 2023 to May 2023. A non-probability convenience sampling method was employed, selecting female cancer patients visiting the oncology department during the study period, with a total sample size of 204 patients. The inclusion criteria comprised female patients aged 18 years and above who had been diagnosed with cancer at least two weeks before enrollment and were willing to participate in the study. ⁽⁷⁾ Exclusion criteria included patients with pre-existing psychiatric illness, those unable to communicate due to critical illness or complications, and individuals unwilling to participate.

Following approval from the Institutional Ethics Committee (IEC), written informed consent was obtained from eligible participants. Data was collected using a pretested, semi-structured socio-demographic questionnaire along with the Depression Anxiety Stress Scale-21 (DASS-21), a self-reported instrument designed to assess symptoms of depression, anxiety, and stress. The DASS-21 consists of 21 items, with seven items measuring each of the three domains. Respondents rated the frequency and intensity of their symptoms over the past week on a 4-point Likert scale, ranging from 0 (did not apply at all) to 3 (applied very much or most of the time). Higher scores indicate greater severity of symptoms. Data collection was conducted using a pen-and-paper method, ensuring absolute confidentiality for all study participants.

Once collected, the data were systematically recorded in Microsoft Excel and analyzed using appropriate statistical software, including SPSS Version 26. Results were presented through tabular and graphical formats, with additional statistical analysis performed as required to derive meaningful interpretations of the findings. This methodological approach ensured rigorous data collection, analysis, and interpretation, contributing to a comprehensive understanding of psychological distress among female cancer patients.

RESULTS

The majority of female cancer patients in the study were aged 40-59 years (61.3%), with 64.7% being employed and 92.2% married. Most had middle school education (46.1%) and belonged to the upper-middle socio-economic class (67.6%). A smaller proportion were either illiterate (11.3%), unemployed or retired (35.3%), or from lower socio-economic backgrounds (9.9%) as shown in Table 1.

Table 1: Distribution of Female Cancer Patients by Socio-demographic Characteristics (N=204)

Characteristics		Number of study participants (N=204)
Age group (Years)	18-39	25 (12.2%)
	40-59	125 (61.3%)
	>=60	54 (26.5%)
Education	Illiterate	23 (11.3%)
	Primary	27 (13.2%)
	Middle school	94 (46.1%)
	Higher secondary school	50 (24.5%)
	Graduate and above	10 (4.9%)
Employment status	Employed	132 (64.7%)
	Not employed/Retired	72 (35.3%)
Marital status	Unmarried/Divorced	16 (7.8%)
	Married	188 (92.2%)
Socio-economic class	Upper middle	138 (67.6%)
	Lower middle	7 (3.4%)
	Upper lower	39 (19.1%)
	Lower	20 (9.9%)

(Note: Percentage in the above table calculated column-wise)

Anxiety was the most prevalent psychological condition among female cancer patients (32.8%), followed by depression (28.4%) and stress (24%), highlighting the significant emotional burden associated with cancer diagnosis and treatment, as shown in Figure 1.

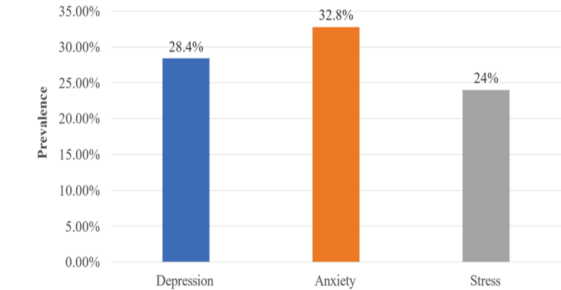


Figure 1: Prevalence of Depression, Anxiety, and Stress in Cancer Patients (N=204)

Most female cancer patients experienced normal levels of stress (76%), anxiety (67%), and depression (71.1%), while a significant proportion had extremely severe anxiety (22%) and moderate depression (9%), and stress (11%). (Figure 2.)

Table 2: Association of Socio-demographic Characteristics with Depression (N=204)

Socio-Demographic details (N=204)		Normal	Mild	Moderate	Severe	Extremely Severe	Total	p Value
Age	18-39	9 (34.6%)	1 (3.8%)	5 (19.2%)	8 (30.9%)	3 (11.5%)	26 (100%)	<0.01
	40-59	112 (90.3%)	3 (2.4%)	3 (2.4%)	2 (1.6%)	4 (3.3%)	124 (100%)	
	>=60	25 (46.3%)	1 (1.8%)	11 (20.4%)	9 (16.7%)	8 (14.8%)	54 (100%)	
Education	Illiterate	3 (13.1%)	0 (0%)	4 (17.4%)	9 (39.1%)	7 (30.4%)	23 (100%)	<0.01
	Primary	16 (59.3%)	0 (0%)	4 (14.8%)	4 (14.8%)	3 (11.1%)	27 (100%)	
	Middle school	79 (84%)	4 (4.3%)	5 (5.3%)	4 (4.3%)	2 (2.1%)	94 (100%)	
	Higher secondary-intermediate	40 (80%)	1 (2%)	5 (10%)	2 (4%)	2 (4%)	50 (100%)	
	Graduate and above	7 (70%)	1 (10%)	1 (10%)	0 (0%)	1 (10%)	10 (100%)	
Employment status	Employed	117 (88.6)	3 (2.3%)	9 (6.8%)	3 (2.3%)	0 (0%)	132 (100%)	<0.01
	Not employed/Retired	28 (38.9%)	3 (4.2%)	10 (13.9%)	16 (22.2%)	15 (20.8%)	72 (100%)	
Marital status	Single/Divorced/Widowed	1 (6.3%)	0 (0%)	2 (12.5%)	7 (43.7%)	6 (37.5%)	16 (100%)	<0.01
	Married	144 (76.6%)	6 (3.2%)	17 (9%)	12 (6.4%)	9 (4.8%)	188 (100%)	
Socio-economic class	Upper middle	6 (85.7%)	0 (0%)	1 (14.3%)	0 (0%)	0 (0%)	7 (100%)	<0.01
	Lower middle	34 (87.2%)	1 (2.6%)	2 (5.1%)	2 (5.1%)	0 (0%)	39 (100%)	
	Upper lower	104 (75.4%)	5 (3.6%)	12 (8.7%)	10 (7.2%)	7 (5.1%)	138 (100%)	
	Lower	1 (5%)	0 (0%)	4 (20%)	7 (35%)	8 (40%)	20 (100%)	

(Note: Percentage in the above table calculated row-wise)

Table 3: Association of Socio-demographic Characteristics with Anxiety (N=204)

Socio-Demographic details (N=204)		Normal	Mild	Moderate	Severe	Extremely Severe	Total	p Value
Age	18-39	9 (34.6%)	0 (0%)	2 (7.7%)	2 (7.7%)	13 (50%)	26 (100%)	<0.01
	40-59	107 (86.3%)	5 (4%)	3 (2.4%)	0 (0%)	9 (7.3%)	124 (100%)	
	>=60	21 (38.9%)	1 (1.9%)	6 (11.1%)	4 (7.4%)	22 (40.7%)	54 (100%)	

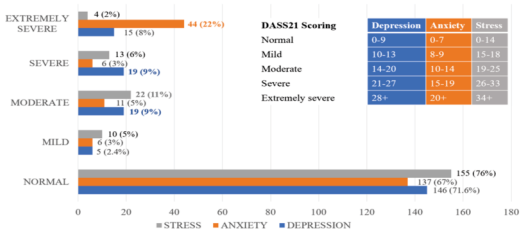


Figure 2: Severity of Depression, Anxiety, and Stress in Cancer Patients (N=204)

The study revealed significant associations between socio-demographic factors and psychological distress among female cancer patients. Younger patients experienced higher rates of severe depression, anxiety, and stress, while those aged 40–59 exhibited better mental resilience. Education level strongly influenced psychological well-being, with illiterate individuals showing higher distress levels (Table 2, Table 3, Table 4). Employment status was another key factor, as unemployed patients demonstrated significantly greater emotional burden compared to employed individuals (Table 2, Table 3, Table 4). Socio-economic status also played a crucial role, with lower-class individuals exhibiting disproportionately high levels of depression and anxiety (Table 2, Table 3).

CONCLUSIONS

The findings of this study highlight the substantial psychological burden experienced by female cancer patients, with anxiety being the most prevalent condition, followed by depression and stress. Socio-demographic factors such as age, education, employment status, and socio-economic class were significantly associated with mental health outcomes. Younger, unemployed, and lower-income patients exhibited higher rates of severe psychological distress, indicating their increased vulnerability.

This study underscores the need for early psychological screening and targeted interventions for female cancer patients, especially younger, unemployed, and lower socio-economic groups, as they experience higher distress levels. Employment and social support programs can enhance mental resilience, while educational initiatives can improve coping strategies. Integrating mental health professionals into oncology care ensures holistic support, and policy-driven approaches can improve access to psychosocial services. Implementing these strategies can enhance treatment adherence and overall well-being, fostering a more supportive healthcare environment for female cancer patients.

The study's findings may have limited generalizability as it was conducted in a single tertiary care hospital, restricting its applicability to broader and more diverse healthcare settings.

Education	Illiterate	3 (13%)	0 (0%)	0 (0%)	3 (13%)	17 (74%)	23 (100%)	<0.01
	Primary	15 (55.6%)	1 (3.7%)	0 (0%)	0 (0%)	11 (40.7%)	27 (100%)	
	Middle school	77 (82%)	2 (2.1%)	7 (7.4%)	0 (0%)	8 (8.5%)	94 (100%)	
	Higher secondary-intermediate	36 (72%)	3 (6%)	2 (4%)	2 (4%)	7 (14%)	50 (100%)	
	Graduate and above	6 (60%)	0 (0%)	2 (20%)	1 (10%)	1 (10%)	10 (100%)	
Employment status	Employed	111 (84.1%)	3 (2.3%)	9 (6.8%)	2 (1.5%)	7 (5.3%)	132 (100%)	<0.01
	Not employed/Retired	26 (36%)	3 (4.2%)	2 (2.8%)	4 (5.6%)	37 (51.4%)	72 (100%)	
Marital status	Single/Divorced/Widowed	1 (6.3%)	0 (0%)	0 (0%)	0 (0%)	15 (93.7%)	16 (100%)	<0.01
	Married	136 (72.3%)	6 (3.2%)	11 (5.9%)	6 (3.2%)	29 (15.4%)	188 (100%)	
Socio-economic class	Upper middle	5 (71.4%)	0 (0%)	1 (14.3%)	1 (14.3%)	0 (0%)	7 (100%)	<0.01
	Lower middle	33 (84.6%)	1 (2.6%)	1 (2.6%)	0 (0%)	4 (10.3%)	39 (100%)	
	Upper lower	98 (71%)	5 (3.6%)	9 (6.5%)	2 (1.4%)	23 (16.7%)	138 (100%)	
	Lower	1 (5%)	0 (0%)	0 (0%)	3 (15%)	16 (80%)	20 (100%)	

(Note: Percentage in the above table calculated row-wise)

Table 4: Association of Socio-demographic Characteristics with Stress (N=204)

Socio-Demographic details (N=204)		Normal	Mild	Moderate	Severe	Extremely Severe	Total	p Value
Age	18-39	11 (42.3%)	2 (7.7%)	6 (23.1%)	6 (23.1%)	1 (3.8%)	26 (100%)	<0.01
	40-59	115 (92.7%)	1 (0.8%)	4 (3.2%)	2 (7.7%)	2 (1.6%)	124 (100%)	
	>=60	29 (53.7%)	7 (13%)	12 (22.2%)	5 (9.3%)	1 (1.8%)	54 (100%)	
Education	Illiterate	3 (13%)	3 (13%)	8 (34.9%)	6 (26.1%)	3 (13%)	23 (100%)	<0.01
	Primary	16 (59.2%)	0 (0%)	7 (26%)	4 (14.8%)	0 (0%)	27 (100%)	
	Middle school	84 (89.4%)	2 (2.1%)	5 (5.3%)	2 (2.1%)	1 (1.1%)	94 (100%)	
	Higher secondary-intermediate	44 (88%)	3 (6%)	2 (4%)	1 (2%)	0 (0%)	50 (100%)	
	Graduate and above	8 (80%)	2 (20%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)	
Employment status	Employed	123 (93.2%)	5 (3.8%)	4 (3%)	0 (0%)	0 (0%)	132 (100%)	<0.01
	Not employed/Retired	32 (44.4%)	5 (7%)	18 (25%)	13 (18.1%)	4 (5.5%)	72 (100%)	
Marital status	Single/Divorced/Widowed	1 (6.3%)	0 (0%)	4 (25%)	7 (43.7%)	4 (25%)	16 (100%)	<0.01
	Married	154 (82%)	10 (5.2%)	18 (9.6%)	6 (3.2%)	0 (0%)	188 (100%)	
Socio-economic class	Upper middle	6 (85.7%)	1 (14.3%)	0 (0%)	0 (0%)	0 (0%)	7 (100%)	<0.01
	Lower middle	35 (89.7%)	3 (7.7%)	1 (2.6%)	0 (0%)	0 (0%)	39 (100%)	
	Upper lower	113 (81.9%)	4 (2.9%)	12 (8.7%)	7 (5.1%)	2 (1.4%)	138 (100%)	
	Lower	1 (5%)	2 (10%)	9 (45%)	8 (40%)	2 (10%)	20 (100%)	

(Note: Percentage in the above table calculated row-wise)

REFERENCES

- Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin* [Internet]. 2018 Nov [cited 2023 Feb 11];68(6):394-424.
- FS Maharashtra.pdf[Internet]. [cited 2023 Feb 13].
- Mason A, Juyal R, Das SC, Shikha D, Saini S, Semwal J. Prevalence and correlates of psychological distress among cancer patients in a tertiary care hospital in northern India. *Int J Community Med Public Health* [Internet]. 2019 Apr 27 [cited 2023 Feb 11];6(5):2223.
- Smith HR. Depression in cancer patients: Pathogenesis, implications and treatment (Review). *Oncol Lett* [Internet]. 2015 Apr [cited 2023 Feb 11];9(4):1509-14.
- Assistant Professor of Psychiatry, DMCH, Darbhanga, Bihar, Kumar R. Prevalence of Anxiety and Depression among Cancer Patients. *J Med Sci Clin Res* [Internet]. 2016 Nov 6 [cited 2023 Feb 11];04(11):13696-13599.
- Sharma DC. Cancer data in India show new patterns. *Lancet Oncol* [Internet]. 2016 Jul [cited 2023 Feb 12];17(7):e272.
- Diagnostic and Statistical Manual of Mental Disorders: Fifth Edition Text Revision DSM-5-TR™