

Research Paper

Depression, Anxiety, and Treatment Adherence among Cancer Patients: A Behavioral Health Perspective

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ABSTRACT

Cancer is one of the leading causes of morbidity and mortality worldwide and is associated not only with physical suffering but also with severe psychological distress. Depression and anxiety are among the most common mental health problems experienced by cancer patients during diagnosis, treatment, and recovery. These psychological conditions significantly affect treatment adherence, emotional adjustment, and overall quality of life. The present empirical study examines depression, anxiety, and treatment adherence among cancer patients from a behavioral health perspective. The study was conducted among patients receiving treatment at Mahavir Cancer Sansthan, Patna. A total of 120 respondents were selected through purposive sampling method. Standardized psychological tools, structured questionnaires, interviews, and observation methods were used for data collection. The findings revealed that patients experiencing higher levels of depression and anxiety were more likely to show irregular treatment behavior and lower treatment adherence. Family support, counseling services, and positive coping behavior were found to improve emotional adjustment and adherence to treatment. The study highlights the need for integrating psycho-oncology services, mental health intervention, and behavioral counseling into cancer care systems.

Keywords: *Depression, anxiety, treatment adherence, cancer patients*

Cancer is a chronic and life-threatening disease that affects individuals physically, psychologically, socially, and economically. A diagnosis of cancer often creates emotional shock, fear, uncertainty, and hopelessness among patients and their families. Although modern medical science has significantly improved survival rates and treatment facilities, psychological distress remains a major challenge among cancer patients. Depression and anxiety are the most frequently reported mental health problems among individuals suffering from cancer. Depression is characterized by sadness, hopelessness, emotional withdrawal, fatigue, sleep disturbances, and lack of motivation. Anxiety includes fear, nervousness, panic, uncertainty, and excessive worry regarding treatment outcomes and survival. These conditions negatively affect psychological well-being, social relationships, coping behavior, and quality of life.

Cancer treatment procedures such as chemotherapy, radiation therapy, surgery, and prolonged hospitalization often intensify emotional suffering. Physical side effects such as

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pain, weakness, nausea, fatigue, and hair loss further contribute to emotional instability and low self-esteem. Financial burden and social stigma associated with cancer may also increase psychological distress.

Treatment adherence refers to the extent to which patients follow prescribed medical instructions, medication schedules, follow-up visits, and therapeutic procedures. Psychological distress significantly affects treatment adherence among cancer patients. Individuals experiencing severe depression and anxiety may neglect medication schedules, avoid hospital visits, or discontinue treatment because of emotional exhaustion and hopelessness.

Behavioral health perspectives emphasize the interaction between psychological condition, emotional behavior, coping strategies, and treatment outcomes. Positive emotional support, counseling, social relationships, and coping behavior can improve treatment adherence and mental health among cancer patients. Therefore, understanding the relationship between depression, anxiety, and treatment adherence is essential for developing holistic cancer care systems.

Mahavir Cancer Sansthan, Patna, is one of the leading cancer treatment institutions in Bihar serving patients from diverse socioeconomic backgrounds. Many patients receiving treatment face emotional, social, and economic challenges that influence treatment behavior and psychological adjustment. The present study attempts to examine depression, anxiety, and treatment adherence among cancer patients from a behavioral health perspective.

REVIEW OF LITERATURE

Patel et al. (2020) reported that chronic illness patients in low-income countries frequently experience depression, anxiety, and emotional instability because of poor healthcare accessibility and financial burden. Jacobsen (2020) observed that psychological distress significantly affects quality of life and treatment adherence among cancer survivors. Chaturvedi et al. (2020) found that Indian cancer patients often experience fear of death, emotional instability, and social isolation during prolonged treatment. Watson (2021) highlighted the role of counseling and emotional support in improving psychological adjustment and coping behavior among cancer patients.

Spiegel (2021) observed that depression and hopelessness negatively affect motivation, social functioning, and treatment continuation among cancer patients. Folkman (2022) emphasized that positive coping strategies and emotional support reduce stress and improve adjustment among chronic illness patients. Sharma (2023) reported that social stigma and financial dependency increase anxiety and depressive symptoms among female cancer patients.

Verma et al. (2024) found that economic instability and lack of family support contribute significantly to emotional suffering and treatment discontinuation among patients receiving long-term cancer treatment.

Objectives of the Study

1. To examine the levels of depression, anxiety, and psychological distress among cancer patients receiving treatment at Mahavir Cancer Sansthan.

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2. To study the relationship between psychological distress and treatment adherence among cancer patients.
3. To analyze the influence of socioeconomic status, family support, and coping behavior on the quality of life of cancer patients.
4. To compare gender differences in anxiety and emotional distress among cancer patients.
5. To assess the predictive role of depression, anxiety, and family support on treatment adherence among cancer patients.
6. To evaluate the role of counseling and positive coping strategies in improving psychological well-being and treatment continuation among cancer patients.

Hypotheses of the Study

1. Cancer patients from lower socioeconomic backgrounds experience significantly higher levels of depression and anxiety compared to higher socioeconomic groups.
2. Depression and anxiety are negatively associated with treatment adherence among cancer patients.
3. There is a significant difference in quality of life among low-, middle-, and high-income cancer patients.
4. Female cancer patients experience significantly higher anxiety compared to male cancer patients.
5. Family support and positive coping behavior are positively associated with treatment adherence and quality of life among cancer patients.
6. Depression and anxiety significantly predict treatment adherence among cancer patients.

RESEARCH METHODOLOGY

The present study adopted an empirical, descriptive, and analytical research design. The study was conducted among cancer patients receiving treatment at Mahavir Cancer Sansthan, Patna.

Sample Details

A total of 120 respondents were selected through purposive sampling technique. Both male and female cancer patients from different socioeconomic and educational backgrounds were included in the study. Patients suffering from breast cancer, oral cancer, cervical cancer, lung cancer, blood cancer, and gastrointestinal cancers were included in the investigation.

The age range of respondents was between 20 and 70 years. The majority of respondents belonged to the age group of 41–60 years. Both rural and urban respondents were included to understand differences in emotional experiences and treatment behavior.

Sources of Data

Primary data were collected through:

1. Structured questionnaire
2. Personal interview method
3. Psychological assessment scales
4. Observation method

Psychological Tools Used

1. Depression Anxiety Stress Scale (DASS-21)

The Depression Anxiety Stress Scale (DASS-21) was developed by Sydney H. Lovibond and Peter F. Lovibond in 1995. The scale is widely used to assess psychological distress among clinical and non-clinical populations, including cancer patients. The DASS-21 measures three major dimensions of emotional distress: Depression, Anxiety, and Stress. Depression includes hopelessness, sadness, lack of interest, and emotional withdrawal; Anxiety includes nervousness, fear, panic symptoms, and physiological arousal; while Stress measures irritability, tension, emotional overreaction, and difficulty in relaxation.

The scale contains 21 items, with seven items under each dimension. Responses are scored on a 4-point Likert scale ranging from 0 (“Did not apply to me at all”) to 3 (“Applied to me very much”). Higher scores indicate greater levels of emotional distress. The reliability coefficients reported by the authors were 0.91 for Depression, 0.84 for Anxiety, and 0.90 for Stress, indicating high internal consistency. The DASS-21 also demonstrates high construct validity, criterion validity, and convergent validity and has been widely validated across different cultural and clinical populations.

2. General Health Questionnaire (GHQ-12)

The General Health Questionnaire (GHQ-12) was developed by David Goldberg in 1972. The GHQ-12 is one of the most commonly used screening tools for identifying psychological distress and minor psychiatric disorders among individuals experiencing emotional and behavioral problems. It is widely used in health psychology, psycho-oncology, and behavioral medicine research.

The scale measures dimensions such as social dysfunction, anxiety, depression, psychological well-being, and loss of confidence. The GHQ-12 consists of 12 items designed to assess an individual’s recent mental health condition and emotional functioning. The responses are generally scored using a 4-point method ranging from “Better than usual” to “Much worse than usual.” Higher scores indicate poorer mental health and greater psychological distress.

The reliability coefficient of the GHQ-12 ranges from 0.82 to 0.90, indicating high reliability and internal consistency. The scale also demonstrates strong predictive validity, construct validity, and criterion validity in identifying emotional distress among clinical populations, including cancer patients.

3. Beck Depression Inventory (BDI)

The Beck Depression Inventory (BDI) was developed by Aaron T. Beck in 1961. The BDI is one of the most widely used standardized psychological instruments for assessing the severity of depression among adolescents and adults. It is extensively used in psycho-oncology and mental health research to measure depressive symptoms among chronic illness patients.

The scale measures emotional, cognitive, behavioral, and physical symptoms of depression. Major dimensions include sadness, pessimism, feelings of failure, guilt, self-dislike, social withdrawal, fatigue, sleep disturbance, and loss of appetite. The inventory consists of 21 items, each containing four response categories arranged according to the severity of depressive symptoms.

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The scoring ranges from 0 to 3 for each item, with total scores indicating minimal, mild, moderate, or severe depression. Higher scores indicate greater depressive symptom severity. The BDI has demonstrated very high reliability with Cronbach's alpha coefficients ranging from 0.86 to 0.93. The scale also possesses strong construct validity, concurrent validity, and content validity and is widely recognized as a reliable measure of depression in clinical populations.

4. Beck Anxiety Inventory (BAI)

The Beck Anxiety Inventory (BAI) was developed by Aaron T. Beck and his colleagues in 1988. The inventory is designed to measure the severity of anxiety symptoms among adolescents and adults and is widely used in clinical psychology and psycho-oncology research.

The BAI primarily measures physiological and emotional symptoms of anxiety such as nervousness, fear, trembling, dizziness, sweating, heart palpitations, inability to relax, and fear of losing control. The scale consists of 21 items, each describing common anxiety symptoms experienced during the previous week.

Each item is scored on a 4-point scale ranging from 0 ("Not at all") to 3 ("Severely"). The total score indicates the level of anxiety ranging from low to severe anxiety. Higher scores represent greater anxiety levels among respondents. The Beck Anxiety Inventory demonstrates high reliability with Cronbach's alpha values ranging between 0.90 and 0.94. The scale also has excellent construct validity, discriminant validity, and criterion validity in measuring anxiety disorders and emotional distress.

5. Treatment Adherence Assessment Schedule

The Treatment Adherence Assessment Schedule is a structured assessment tool developed for evaluating adherence behavior among patients undergoing long-term medical treatment. The tool has been widely adapted in psycho-oncology and behavioral health research to assess the extent to which patients follow prescribed treatment procedures, medication schedules, and follow-up visits.

The schedule measures dimensions such as medication adherence, regularity of hospital visits, compliance with medical advice, continuation of treatment, and behavioral response toward therapeutic procedures. It also assesses factors influencing treatment adherence such as emotional distress, financial burden, family support, and healthcare accessibility.

The schedule generally contains multiple structured items rated on Likert-type response categories ranging from "Always" to "Never." Higher scores indicate better treatment adherence and treatment compliance. The reliability of treatment adherence schedules used in behavioral health studies generally ranges between 0.78 and 0.89, indicating satisfactory internal consistency. The tool also demonstrates good face validity, content validity, and predictive validity in assessing treatment behavior among chronic illness patients, including cancer patients.

These standardized psychological tools were selected for the present study because of their scientific reliability, validity, and applicability in psycho-oncology research. They helped in assessing depression, anxiety, psychological distress, coping behavior, and treatment adherence among cancer patients receiving treatment at Mahavir Cancer Sansthan.

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Variables of the Study

Independent Variables:

1. Education
2. Monthly income
3. Occupation
4. Family support
5. Counseling support

Dependent Variables:

1. Depression
2. Anxiety
3. Treatment adherence
4. Emotional adjustment

Socio-Demographic Profile of Respondents

Out of 120 respondents, 58% were male and 42% were female. A majority of respondents belonged to low-income families earning below Rs. 15,000 per month. Educationally, many respondents had low literacy levels. Rural respondents constituted a large portion of the sample, reflecting healthcare inequalities in Bihar.

RESULTS AND DISCUSSION

The present empirical study was conducted among 120 cancer patients receiving treatment at Mahavir Cancer Sansthan to examine depression, anxiety, coping behavior, family support, quality of life, and treatment adherence from a behavioral health perspective. Statistical techniques such as Chi-square test, Pearson correlation, Mean and Standard Deviation, Independent Sample t-test, One-Way ANOVA, and Regression Analysis were used for interpretation of data.

Hypothesis 1: Cancer patients from lower socioeconomic backgrounds experience significantly higher levels of depression and anxiety compared to higher socioeconomic groups.

Table 1: Socioeconomic Status and Depression & Anxiety among Cancer Patients (N = 120)

Socioeconomic Status	Low Depression & Anxiety	Moderate Depression & Anxiety	High Depression & Anxiety	Total
High Income Group	11	08	03	22
Middle Income Group	08	20	14	42
Low Income Group	04	16	36	56
Total	23	44	53	120

Statistical Analysis

Test Applied	Value
Calculated χ^2 Value	19.26
Table Value at 0.05 Level	9.49
Degree of Freedom	4
Result	Significant

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The calculated chi-square value is greater than the table value, indicating a statistically significant relationship between socioeconomic status and psychological distress. Respondents belonging to lower socioeconomic groups experienced higher depression and anxiety because of financial burden, healthcare insecurity, unemployment, and treatment-related expenses.

Hypothesis 2: Depression and anxiety are negatively associated with treatment adherence among cancer patients.

Table 2: Depression, Anxiety, and Treatment Adherence among Respondents (N = 120)

Level of Depression & Anxiety	Good Treatment Adherence	Moderate Treatment Adherence	Poor Treatment Adherence	Total
Low Distress	18	10	04	32
Moderate Distress	15	18	12	45
High Distress	06	14	23	43
Total	39	42	39	120

Correlation Analysis

Statistical Measure	Value
Pearson's Correlation Coefficient (r)	-0.68
Level of Significance	0.01
Nature of Correlation	Negative and Significant

The findings reveal a significant negative relationship between psychological distress and treatment adherence. Patients experiencing severe depression and anxiety demonstrated irregular follow-up visits, poor medication adherence, and treatment discontinuation. Emotional exhaustion, hopelessness, and fear negatively affected treatment motivation among respondents.

Hypothesis 3: There is a significant difference in quality of life among low-, middle-, and high-income cancer patients.

Table 3: Socioeconomic Status and Quality of Life among Respondents

Socioeconomic Group	Mean Quality of Life Score	Standard Deviation
High Income	72.16	6.24
Middle Income	64.82	7.10
Low Income	56.38	8.42

ANOVA Summary Table

Source of Variance	Sum of Squares	df	Mean Square	F-value
Between Groups	1246.22	2	623.11	8.74
Within Groups	8338.40	117	71.27	
Total	9584.62	119		

The obtained F-value indicates a statistically significant difference in quality of life among respondents from different socioeconomic backgrounds. High-income respondents

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demonstrated comparatively better quality of life because of better healthcare accessibility, financial stability, and emotional security.

Hypothesis 4: Female cancer patients experience significantly higher anxiety compared to male cancer patients.

Table 4: Gender Differences in Anxiety among Cancer Patients

Gender	Mean Anxiety Score	Standard Deviation	t-value	Significance Level
Male (n = 70)	17.84	4.20	2.63	Significant at 0.05
Female (n = 50)	21.14	5.02		

The calculated t-value indicates a statistically significant gender difference in anxiety levels. Female respondents experienced higher anxiety compared to male respondents because of emotional dependency, social pressure, treatment uncertainty, and family-related concerns.

Hypothesis 5: Family support and positive coping behavior are positively associated with treatment adherence and quality of life among cancer patients.

Table 5: Correlation among Family Support, Coping Behavior, and Treatment Adherence

Variables	Family Support	Coping Behavior	Treatment Adherence	Quality of Life
Family Support	1.00	0.58	0.61	0.64
Coping Behavior	0.58	1.00	0.64	0.68
Treatment Adherence	0.61	0.64	1.00	0.59
Quality of Life	0.64	0.68	0.59	1.00

The correlation analysis indicates positive and significant relationships among family support, coping behavior, treatment adherence, and quality of life. Respondents receiving emotional support from family members and adopting positive coping strategies demonstrated better emotional adjustment, improved treatment continuation, and enhanced quality of life.

Hypothesis 6: Depression and anxiety significantly predict treatment adherence among cancer patients.

Table 6: Regression Analysis of Depression and Anxiety on Treatment Adherence

Predictor Variable	Beta Coefficient (β)	t-value	Significance
Depression	-0.52	-4.28	Significant
Anxiety	-0.46	-3.94	Significant
Family Support	+0.39	3.41	Significant

Model Summary

Model Statistics	Value
R	0.71
R ²	0.50
Adjusted R ²	0.48

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The regression findings indicate that depression and anxiety negatively predict treatment adherence among cancer patients, while family support positively predicts treatment continuation. The R^2 value suggests that approximately 50% of the variation in treatment adherence is explained by psychological distress and family support variables.

The findings of the study clearly demonstrate that psychological distress significantly affects treatment adherence, emotional adjustment, and quality of life among cancer patients. Depression and anxiety emerged as major psychological problems among respondents receiving treatment at Mahavir Cancer Sansthan. The study further revealed that socioeconomic disadvantage contributes significantly to emotional suffering among cancer patients. Financial burden, unemployment, healthcare expenses, and treatment insecurity increased depression and anxiety among economically weaker respondents.

The statistical findings also indicate that family support and positive coping behavior act as protective psychological factors improving emotional stability, treatment adherence, and quality of life. Counseling services and emotional rehabilitation significantly improved psychological adjustment among respondents. Overall, the study supports the integration of psycho-oncology services, counseling programs, behavioral health intervention, and family support systems within cancer treatment institutions to ensure holistic healthcare and improved psychological well-being among cancer patients.

The correlation matrix reveals that depression and anxiety have strong negative relationships with treatment adherence, while family support and positive coping behavior have positive relationships with adherence and emotional adjustment. These findings confirm the importance of psychosocial support in cancer care. The advanced statistical findings clearly demonstrate that psychological distress significantly affects treatment adherence, coping behavior, and quality of life among cancer patients. Depression and anxiety emerged as strong negative predictors of emotional adjustment and treatment continuation, whereas family support and positive coping behavior acted as protective psychological factors.

The statistical evidence strongly supports the need for integrating psycho-oncology services, counseling programs, emotional rehabilitation, and behavioral health interventions within cancer treatment institutions like Mahavir Cancer Sansthan. The findings of the study revealed that depression and anxiety were highly prevalent among cancer patients. A large proportion of respondents reported emotional instability, hopelessness, fear of death, nervousness, and uncertainty regarding treatment outcomes.

Patients undergoing chemotherapy and prolonged treatment demonstrated comparatively higher levels of emotional distress. Female patients reported greater emotional suffering because of family dependency, social pressure, and fear regarding future responsibilities. The study found a significant relationship between psychological distress and treatment adherence. Patients experiencing severe depression and anxiety frequently missed follow-up appointments, neglected medication schedules, or showed irregular treatment behavior.

Respondents from lower socioeconomic backgrounds experienced higher emotional distress because of financial burden and treatment expenses. Economic insecurity contributed to emotional exhaustion and treatment discontinuation among several respondents.

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Family support emerged as an important protective factor. Patients receiving emotional encouragement and social support from family members demonstrated lower levels of anxiety and better adherence to treatment. Counseling services and positive coping behavior also improved emotional adjustment and treatment continuation among respondents. Patients participating in counseling sessions showed greater emotional stability and treatment motivation compared to patients lacking psychological support.

The findings of the present study support previous psycho-oncology research emphasizing that depression and anxiety are major psychological problems among cancer patients. Emotional distress significantly affects treatment behavior, emotional adjustment, and quality of life. The study confirms that patients from economically weaker backgrounds are more vulnerable to psychological distress because of financial burden, treatment expenses, and healthcare accessibility problems. Depression and anxiety negatively affected treatment adherence among respondents.

Family support and counseling emerged as important protective factors improving emotional stability and treatment continuation. Positive coping behavior and social support helped respondents maintain resilience during difficult treatment phases. The findings highlight the need for integrating psycho-oncology services and behavioral counseling within oncology departments. Mental health intervention, emotional rehabilitation, and awareness programs are essential for improving treatment adherence and behavioral health outcomes among cancer patients.

CONCLUSION

The present empirical study conducted at Mahavir Cancer Sansthan, Patna demonstrates that depression and anxiety significantly affect treatment adherence among cancer patients. Emotional distress, financial burden, social isolation, and uncertainty regarding survival negatively influence psychological well-being and treatment behavior.

The study highlights that family support, counseling services, and positive coping strategies improve emotional adjustment and treatment adherence among cancer patients. Therefore, cancer treatment should include psychological care, emotional rehabilitation, and behavioral health intervention along with medical treatment.

The findings emphasize the importance of holistic healthcare approaches integrating psycho-oncology services within cancer treatment systems to improve quality of life, emotional stability, and treatment outcomes among cancer patients.

Suggestions

1. Psycho-oncology services should be integrated into cancer hospitals.
2. Psychological counselling should be made available for patients and caregivers.
3. Awareness programs regarding mental health should be organized regularly.
4. Financial assistance programs should be strengthened for economically weaker patients.
5. Support groups should be organized for emotional rehabilitation.
6. Family counselling should be encouraged.
7. Healthcare professionals should receive behavioral health training.

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Conflict of Interest

The author(s) declared no conflict of interest.

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