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A STUDY ON ASSESSMENT OF ANXIETY, DEPRESSION, AND QUALITY OF LIFE IN PATIENTS WITH CARDIAC DISEASES

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ABSTRACT

Background: Cardiovascular diseases (CVDs) are often accompanied by psychological comorbidities such as anxiety and depression that severely sap their quality of life (QOL)]. Early recognition and treatment are crucial for improved patient outcomes. This study aimed t**o** assess the prevalence and severity of anxiety and depression and evaluate quality of life in patients with cardiac diseases. **Methods:** The study was cross-sectional and done among 120 cardiac patients. Using the GAD-7 scale, anxiety was analyzed; depression was tested using the PHQ-9 scale, and interviewing questions for the quality of life evaluation were taken from the WHOQOL-BREF questionnaire. Demographic and clinical data were collected, and correlations among psychological distress and QOL were analyzed. **Results:** Anxiety was prevalent in 75% of patients, with mild, moderate, and severe anxiety occurring in 35%, 28.3%, and 11.7% of patients, respectively. Depression was present in 76.7%, with moderate depression being the most common at 31.7%. The mean QOL in the whole study population was 51.9 ± 9.8, with the physical (48.3 ± 9.4) and psychological (46.5 ± 10.2) domains most affected. Significantly higher anxiety and depression scores were associated with a poor quality of life ($p < 0.05$). **Conclusion:** Anxiety and depressive disorders are quite prevalent among cardiac cases and are strongly associated with a poor quality of life. Psychological screening and the use of mental health interventions in cardiac care are thus recommended for overall outcomes for patients.

KEYWORDS: Cardiac diseases, Anxiety, Depression, Quality of Life, GAD-7, PHQ-9, WHOQOL-BREF.

INTRODUCTION

Cardiovascular diseases have continued to be the leading cause of morbidity and mortality across the globe, with an incidence causing over 17 million deaths in a year.[1] The rising trends in ischemic heart disease, heart failure, and arrhythmias have brought about an enormous burden on healthcare systems and on the daily lives of patients. Besides the imposed physical impediments, in a number of cases, cardiac diseases would cause psychological distress, thereby affecting treatment and overall prognosis adversely.[2]

Cardiac patients have a high risk of developing anxiety and depression. These conditions may arise from an existential fear of the disease progression, recurrent hospitalizations, and other limitations of physical activity.[3] Psychological comorbidities thereby negatively influence their adherence to medications and self-care behaviors and lifestyle modifications and thus worsen cardiac prognosis. Therefore, early recognition and management of anxiety and depression form an integral part of comprehensive cardiac care.[4]

Anxiety is estimated to affect 30-50% of cardiac patients, whereas depressive symptoms are present in 20-45% of cases, showing a large psychological burden in this population.[5] Anxiety and depression are closely linked and coexist in many cases, further impairing social functioning, sleep, and overall quality of life. Nevertheless, the high prevalence of these disorders does not translate to frequent psychological assessment in everyday cardiology practice.[6]

Quality of life (QOL) is a multidimensional construct reflecting physical, psychological, social, and environmental well-being. Cardiovascular diseases usually lower the QOL of an individual in the physical and psychological domains.[7] An assessment through validated tools such as WHOQOL-BREF helps to identify the areas of functional impairment and assist with interventions that would increase overall functioning of the patient. Anxiety, depression, and overall psychological distress have been consistently linked to a lowered QOL in cardiac-involved population.[8]

Considering the notably higher trends for anxiety and depression and their negative influence on quality of life, evaluation of these parameters in cardiac patients has to be done systematically.[9] This study attempts to quantify the burden of psychological distress and assess its correlation with the quality of life through the use of GAD-7, PHQ-9, and WHOQOL-BREF scales. The result would help decide integrated care strategies concentrating on both mental and physical health towards better patient-centered outcomes within cardiac populations.[10]

AIM

To assess the prevalence and severity of anxiety and depression, and to evaluate the quality of life in patients with cardiac diseases attending a tertiary care hospital.

OBJECTIVES

1. To determine the prevalence and severity of anxiety among cardiac patients using the GAD-7 scale.
2. To determine the prevalence and severity of depression among cardiac patients using the PHQ-9 scale.
3. To assess the quality of life in cardiac patients using the WHOQOL-BREF questionnaire.
4. To analyze the relationship between anxiety, depression, and quality of life in cardiac patients.
5. To evaluate the association of sociodemographic and clinical factors (age, gender, disease duration, type of cardiac disease) with psychological distress and quality of life.

MATERIALS AND METHODS

Study Design

A cross-sectional, observational study was conducted to assess the levels of anxiety, depression, and quality of life (QoL) among patients diagnosed with cardiac diseases. The study was carried out in the Department of Cardiology at a tertiary care teaching hospital over a period of six months.

Study Setting

The study was conducted in the inpatient and outpatient units of the Cardiology Department. Patients attending regular follow-ups or admitted for management of cardiac diseases such as ischemic heart disease, heart failure, valvular disorders, and arrhythmias were screened for eligibility.

Study Population

The study population included both male and female adult patients diagnosed with cardiac diseases who fulfilled the inclusion criteria and were willing to participate.

Inclusion Criteria

- Patients aged 18 years and above.
- Diagnosed with cardiac diseases confirmed by a cardiologist (e.g., coronary artery disease, heart failure, valvular heart disease).
- Able to understand and respond to the questionnaires.
- Provided written informed consent to participate.

Exclusion Criteria

- Patients with a history of psychiatric illness or currently receiving antidepressant/anxiolytic therapy.
- Patients with acute medical or surgical emergencies.
- Critically ill or non-communicative patients.
- Patients who declined to participate.

Sample Size

A total of 120 patients were enrolled using convenience sampling based on the hospital's patient inflow during the study period.

Data Collection Procedure

Eligible patients were identified and briefed about the study objectives and procedures written informed consent was obtained. A pre-designed data collection form was used to record: Sociodemographic data: Age, gender, marital status, education, occupation, and residence (rural/urban) and Clinical data: Type and duration of cardiac disease, comorbidities, and ongoing medications. Participants were then administered the following standardized questionnaires in their preferred language (English or local language version):

- **Generalized Anxiety Disorder-7 (GAD-7)** scale
- **Patient Health Questionnaire-9 (PHQ-9)** scale
- **WHO Quality of Life-BREF (WHOQOL-BREF)** questionnaire

The questionnaires were self-administered for literate patients and interviewer-administered for illiterate or elderly patients to ensure accuracy and completeness.

Complete study process

The present cross-sectional observational study was conducted among 120 patients diagnosed with various cardiac diseases in a tertiary care hospital. After obtaining ethical clearance and informed consent, relevant sociodemographic and clinical details were recorded. Standardized scales including the Generalized Anxiety Disorder Scale (GAD-7) for anxiety, the Patient Health Questionnaire (PHQ-9) for depression, and the WHO Quality of Life-BREF (WHOQOL-BREF) for quality of life assessment were administered. Data were analyzed using SPSS software to determine the prevalence and severity of anxiety and depression, and their correlation with quality of life scores. Statistical significance was set at $p<0.05$ for all analyses.

RESULTS

Table 1: Demographic Characteristics of Study Participants (n = 120).

Variable	Category	No. of Patients (n)	Percentage (%)
Age Group (years)	<40	18	15.0
	40–59	56	46.7
	≥60	46	38.3
Gender	Male	72	60.0
	Female	48	40.0
Literacy Status	Literate	88	73.3
	Illiterate	32	26.7
Employment Status	Employed	54	45.0
	Unemployed/Retired	66	55.0
Residence	Urban	78	65.0
	Rural	42	35.0

The study included 120 cardiac patients, of whom 60% were males and 40% females. The majority (46.7%) were aged between 40–59 years, while 38.3% were above 60 years. Most participants (73.3%) were literate, and 55% were unemployed or retired. A higher proportion of patients (65%) belonged to urban areas compared to 35% from rural regions, indicating a higher prevalence of cardiac diseases among urban residents.

Table 2: Clinical Characteristics of Cardiac Patients.

Variable	Category	No. of Patients (n)	Percentage (%)
Type of Cardiac Disease	Ischemic Heart Disease	70	58.3
	Heart Failure	30	25.0
	Arrhythmia	20	16.7
Duration of Disease	<1 year	22	18.3
	1–5 years	58	48.3
	>5 years	40	33.4
Past Medications	Beta-blockers	68	56.7
	ACE Inhibitors	52	43.3
	Diuretics	36	30.0
	Antiplatelets	40	33.3
	Statins	50	41.7

Ischemic heart disease was the most common diagnosis (58.3%), followed by heart failure (25%) and arrhythmia (16.7%). Nearly half (48.3%) of the patients had cardiac illness for 1–5 years. Beta-blockers were the most commonly

prescribed drugs (56.7%), followed by ACE inhibitors (43.3%) and statins (41.7%). This reflects standard pharmacological management in chronic cardiac conditions.

Table 3: Distribution of Anxiety Levels (GAD-7 Scale).

Anxiety Level	Score Range	No. of Patients (n)	Percentage (%)
Minimal/No Anxiety	0–4	30	25.0
Mild Anxiety	5–9	42	35.0
Moderate Anxiety	10–14	34	28.3
Severe Anxiety	15–21	14	11.7

According to the GAD-7 scale, 75% of the patients experienced some level of anxiety. Mild anxiety was observed in 35% of participants, while 28.3% showed moderate anxiety and 11.7% had severe anxiety. Only 25% reported minimal or no anxiety, emphasizing that anxiety is a common comorbidity in cardiac patients.

Table 4: Prevalence of Anxiety among Study Participants.

Presence of Anxiety	No. of Patients (n)	Percentage (%)
Present (GAD-7 ≥5)	90	75.0
Absent (GAD-7 <5)	30	25.0

Overall, 75% of the study population had clinically significant anxiety (GAD-7 ≥5). This highlights the psychological burden associated with cardiac illnesses and the importance of screening for anxiety during routine cardiac evaluations.

Table 5: Distribution of Depression Levels (PHQ-9 Scale).

Depression Level	Score Range	No. of Patients (n)	Percentage (%)
None/Minimal	0–4	28	23.3
Mild	5–9	36	30.0
Moderate	10–14	38	31.7
Moderately Severe	15–19	10	8.3
Severe	20–27	8	6.7

Depression was highly prevalent among cardiac patients, with 76.7% having PHQ-9 scores ≥5. Moderate depression (31.7%) was most frequent, followed by mild depression (30%). Severe depression was noted in 6.7% of participants, indicating a significant emotional burden in this group.

Table 6: Prevalence of Depression among Study Participants.

Presence of Depression	No. of Patients (n)	Percentage (%)
Present (PHQ-9 ≥5)	92	76.7
Absent (PHQ-9 <5)	28	23.3

Out of 120 patients, 92 (76.7%) exhibited symptoms of depression of varying severity. This high prevalence underlines the need for integrating psychological care into the management of cardiac disease to improve overall health outcomes.

Table 7: WHOQOL-BREF Domain Scores.

Domain	Mean Score ± SD
Physical Health	48.3 ± 9.4
Psychological Health	46.5 ± 10.2
Social Relationships	55.2 ± 11.6
Environmental Domain	57.4 ± 10.8
Overall QOL Score	**51.9 ± 9.8**

The WHOQOL-BREF scores showed that quality of life was poorest in the psychological and physical domains compared to social and environmental aspects. The mean overall QOL score was 51.9 ± 9.8, indicating moderate impairment. Psychological well-being appeared most affected, consistent with the high anxiety and depression rates found in this cohort.

Table 8: Interpretation of Quality of Life Levels.

QOL Interpretation	Score Range	No. of Patients (n)	Percentage (%)
Poor Quality of Life	<50	46	38.3
Moderate Quality of Life	50–70	58	48.3
Good Quality of Life	>70	16	13.4

Almost half of the patients (48.3%) had a moderate quality of life, while 38.3% reported poor QOL. Only 13.4% experienced good quality of life. Poorer QOL was significantly associated with higher anxiety and depression scores, suggesting a strong inverse relationship between psychological distress and perceived life satisfaction.

DISCUSSION

Cardiac diseases are often accompanied by significant psychological distress, which adversely affects treatment adherence, disease outcomes, and overall quality of life. In this study, a high prevalence of anxiety (75%) and depression (76.7%) was observed among patients with cardiac diseases, consistent with previous literature reporting rates ranging from 30% to 50% for anxiety and 20% to 45% for depression in similar populations (Celano et al., 2018; Thombs et al., 2015). The predominance of moderate anxiety (28.3%) and moderate depression (31.7%) highlights the substantial emotional burden faced by these patients.

The findings demonstrate that anxiety and depression are significantly associated with reduced quality of life, particularly in the **physical and psychological domains** as measured by WHOQOL-BREF. This is consistent with prior studies indicating that psychological distress negatively impacts self-care, adherence to medications, and daily functioning (Kuhl et al., 2020). The social and environmental domains were relatively less affected, suggesting that external support systems and living conditions may buffer the psychological impact to some extent.

Older age, urban residence, and chronicity of cardiac illness were observed to be associated with higher levels of anxiety and depression, which may reflect increased disease burden and lifestyle limitations. The high prevalence of anxiety and depression emphasizes the need for **early identification through routine screening** using validated tools such as GAD-7 and PHQ-9. Early detection and timely psychosocial interventions, including counseling, cognitive behavioral therapy, or pharmacotherapy when indicated, could improve patient well-being and adherence.

Quality of life scores were inversely correlated with anxiety and depression, indicating that higher psychological distress is associated with poorer perceived health and life satisfaction. These findings reinforce the importance of adopting a **holistic, patient-centered approach** in cardiac care that integrates mental health support alongside standard medical management.

The study was cross-sectional, limiting causal inferences. The sample was from a single tertiary hospital, which may affect generalizability. Self-reported questionnaires may have introduced response bias. Future multicenter, longitudinal studies are recommended to evaluate the impact of interventions aimed at reducing anxiety and depression on long-term cardiac outcomes. Anxiety and depression are highly prevalent among cardiac patients and significantly

impair quality of life. Routine mental health screening and integrated psychosocial interventions should be considered essential components of comprehensive cardiac care to optimize both psychological and physical outcomes.

CONCLUSION

Anxiety and depression are highly prevalent among patients with cardiac diseases, with three-quarters of the study population exhibiting clinically significant symptoms. These psychological comorbidities are strongly associated with impaired quality of life, particularly in the physical and psychological domains. Sociodemographic factors such as older age, urban residence, and longer disease duration further contribute to higher levels of distress. The findings emphasize the critical need for routine mental health screening and the integration of psychosocial interventions into standard cardiac care. Addressing psychological well-being alongside medical management can enhance overall patient outcomes, adherence, and quality of life.

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