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Assessment of Association of Psychiatric Disorders on Quality of Life in Patients with Cardiac Disorders

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KEYWORDS

Cardiac disorders, Psychiatric disorders, Quality of life, WHOQOL-BREF, MINI interview

ABSTRACT:

Introduction : Cardiovascular diseases are group of disorders of the heart and blood vessels. Which is caused mainly by high blood pressure, high LDL cholesterol, diabetes, smoking and obesity. Psychiatric disorder is characterized by a clinically significant disturbance in an individual's cognition, emotional regulation, or behaviour. It results from a complex combination of genetic risk, differences in brain development, and exposure to stressors or trauma. Cardiovascular disease has been found to be approximately 1.5–2 times higher in people having severe mental disorders like schizophrenia and bipolar disorder (BPAD). Despite heart conditions significantly impacting quality of life, other factors play an important role as well, including age, sex, medical comorbidities, body mass index, smoking status, social support, depression, and anxiety. While there have been a large number of studies examining particular psychological symptoms with cardiac outcomes and quality of life (QOL), there is a lack of studies that investigate cardiac patients with established psychiatric diagnoses. The hypothesis being tested is that quality of life of cardiac patients with psychiatric disorders is poorer than quality of life of cardiac patients without psychiatric disorders.

Objectives: The study aims to measure the quality of life (QOL) of cardiac patients with psychiatric disorders in comparison to cardiac patients without psychiatric disorders.

Methods: A cross-sectional observational study was conducted in a 450 bedded tertiary care hospital by collecting data patient case sheet and patient medication interview. The study subject involves 120 patients in psychiatry, general medicine and cardiology departments.

Results: A total of 110 patients were included in this study. The study patients comprise 55 cardiac patients with psychiatric disorders and 55 without psychiatric disorders. Majority of cardiac patients with psychiatric disorders were under 51-60 age bar with a mean age of 55 and cardiac patients without psychiatric disorders were under 71-80 age bar with a mean age of 71. In cardiac patients with psychiatric disorders about 32 were male and in cardiac patients without psychiatric population 31 were male. Among the female population 23 and 24 respectively. In assessing social history alcoholic patients were high. Depression was the predominant psychotic disorder among the subjects 34.5% and hypertension was the predominant cardiac disorder 76.3%. Lorazepam followed by olanzapine were the most prescribed antipsychotics for psychiatric patients and aspirin followed by telmisartan were the most prescribed cardiac drugs. Reconfirmation of psychiatric disorders done by mini-interview. The study revealed that cardiac patients with psychiatric disorders had low domain scores than compared to cardiac patients without psychiatric disorders thereby has reduced quality of life proved by WHOQOL-BREF domain scores.

Conclusions: Psychiatric disorder is a risk factor for poor quality of life in cardiac patients. The cardiac patients with psychiatric disorders require particular attention, social and familial mental, physical emotional support accompanied with adequate life style modifications and medication adherence. Patient counselling and PIL was given to the cardiac patients to increase QOL..

1. Introduction

Mental illnesses are health conditions involving changes in emotion, thinking or behaviour (or a combination of these). Mental illnesses can be associated with distress and/or problems functioning in social, work or family activities.[5]

Cardiovascular disease (CVD) is a collective term designating all types of affliction affecting the blood

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circulatory system, including the heart and vasculature, which respectively displaces and conveys the blood.[3] Mental health is an important part of overall health and refers to a person's emotional, psychological, and social well-being. Mental health involves how we think, feel, act, and make choices. Mental health disorders (psychiatric disorders) can be short or long-term and can interfere with a person's mood, behaviour, thinking, and ability to relate to others. Various studies have shown the impact of trauma, depression, anxiety, and stress on the body results in heart diseases (cardiovascular disorders).[2]

People experiencing depression, anxiety, stress, and even post-traumatic stress disorder (PTSD) over a long period of time may experience certain physiologic effects on the body, such as increased heart rate and blood pressure, reduced blood flow to the heart, and heightened levels of cortisol. Over time, these physiologic effects can lead to metabolic disease, and heart disease. Evidence shows that the mental health disorders can develop after cardiac events, including heart failure, stroke, and heart attack.[2][4]

Cardiovascular disease has been found to be approximately 1.5–2 times higher in people having severe mental disorders like schizophrenia and bipolar disorder (BPAD). The cardiovascular risk factors are on rise in general population and poor control of these conditions are responsible for poor health related quality of life. Following adverse coronary events, many people do suffer from depression, anxiety, acute and posttraumatic stress disorders (PTSD) which can have a negative impact and further consequences leading to heart failure (HF), stroke and acute myocardial infarction (MI) thus increasing the cardiological morbidity and contributing to the mortality as added risk of psychiatric morbidity.

2. Methods

Study design and setting:

A cross-sectional observational study was conducted in a 450 bedded tertiary care hospital for over a period of 6 months. The study subject involves 120 patients in psychiatry, general medicine and cardiology departments.

Inclusion and exclusion criteria:

A total of 120 patients were taken into the study. The inclusion criteria were cardiac inpatients with or without psychiatric problems, patients of age 18 years and older and both male and female patients were considered. The exclusion criteria were patients below 18 years of age, patients from departments other than cardio, psychiatry, GM. Patients who doesn't co-operate during the study due to poor health status and patients with sleeping disorder.

Ethical approval:

The study was approved from the hospital authority and institutional human ethical committee (IHEC/SJCP/A-009/2022-2023).

Study procedure:

Data collection was through patient medical records and direct contact, taking demographic information, previous medical and medication history, laboratory results, diagnostic results, and medications prescribed. The responses were documented in a structured format. Patient information was collected using a data entry form that included details such as name, age, sex, admission date, discharge date, reason for admission, medical history, medication history, social history, known allergies, and lab results. Quality of life effect of cardiac patients with and without psychiatric disorders by using WHOQOL-BREF Questionnaire and MINI Interview.

Statistical analysis:

The data were analyzed by various statistical methods such as p value, t value, mean and standard deviation using the software IBM SPSS 22.0 and presented graphically.

3. Results

A cross-sectional study was carried out for a period of 6 months in the departments such as cardiology, psychiatric and general medicine of a 450 bedded tertiary care hospital to assess the impact of psychiatric disorders in cardiac patients.

Table 1: Distribution Of Psychiatric Disorders in Cardiac Patients (N=110)

In this study, data was collected from a total of 110 patients to examine the relationship between cardiac

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health and psychiatric conditions. The sample was evenly divided into two groups. The first group (n1 = 55), representing 50% of the total participants, consisted of cardiac patients who were also diagnosed with psychiatric disorders. These disorders may include conditions such as depression, anxiety, or other mental health issues commonly observed in individuals with chronic physical illnesses. The second group (n2 = 55), also representing 50%, included cardiac patients without any diagnosed psychiatric conditions.

Psychiatric History	No. Of Patients(N=110)	Percentage (%)
With Psychiatric Disorder	55	50
Without Psychiatric Disorder	55	50

Table 2: Demographics characteristics

Among the 110 cardiac patients studied, a higher proportion were male across both categories—those with and without psychiatric disorders. Specifically, 58.18% (n = 32) of cardiac patients with psychiatric disorders (n_1 = 55) were male, compared to 56.36% (n = 31) in the non-psychiatric group (n_2 = 55). Female representation was 41.81% (n = 23) and 43.63% (n = 24) in the respective groups. This indicates that male patients may have a slightly increased risk of developing cardiac conditions, regardless of psychiatric status.

Age distribution analysis, categorized into nine groups, revealed that the 51–60 age group had the highest proportion of cardiac patients with psychiatric disorders (25.4%), while the 71–80 age group had the most cardiac patients without psychiatric disorders (38.1%). The 61–70 age group constituted the majority of all cardiac patients. Social history analysis showed that cardiac patients with psychiatric disorders had a higher prevalence of risk behaviors, with 34.5% reporting alcohol use, 12.7% smoking, and 7.2% other substances (e.g., cannabis, tobacco). Alcohol use was the most common factor in both groups.

Characteristics		With Psychiatric Disorder(N=55)		Without Psychiatric Disorder(N=55)	
		Number	Percentage	Number	Percentage
Age	18-20	0	0	0	0
	21-30	6	10.9	0	0
	31-40	6	10.9	1	1.8
	41-50	4	7.2	0	0
	51-60	14	25.4	6	10.9
	61-70	13	23.6	20	36.3
	71-80	6	10.9	21	38.1
	81-90	5	9	7	12.7
	91-100	1	1.8	0	0
Gender	Male	32	58.18	31	56.36
	Female	23	41.81	24	43.63
Social history	Smoking	7	12.7	8	14.5
	Non-Smokers	43	78.1	47	85.4
	Alcoholic	19	34.5	9	16.3
	Non-Alcoholic	30	54.5	46	83.6
	Others	4	7.2	0	0

Table 3: Distribution Based on Psychiatric and Cardiac Disorders

This study analysed the distribution of cardiac and psychiatric disorders among 110 patients. The most common cardiac condition was hypertension, affecting 76.3% (n = 84) of patients, followed by coronary artery disease (CAD) at 23.6% (n = 26). Other conditions included CVA and CAD-ACS (12.7%, n = 14), myocardial infarction (9%, n = 10), and bradycardia (0.9%, n = 1). This indicates that hypertension is the predominant cardiac disorder in the study population. Among patients with psychiatric disorders (n_1 = 55), the most frequently observed condition was depression (34.5%, n = 19), followed by alcohol dependence syndrome (25.4%, n = 14) and psychotic disorders (23.4%, n = 13). Less common were bipolar disorder (14.5%, n = 8), mania (9%, n = 5), and anxiety (5.5%, n = 3). These findings highlight the significant co-occurrence of cardiac and psychiatric disorders, particularly mood and substance-related conditions, emphasizing the importance of integrated care.

	Types Of Disorders	No Of Patients	Percentage
	ADS	14	25.4
	Mania	5	9
	Depression	19	34.5

Types Of Psychiatric Disorders	Bipolar Disorder	8	14.5
	Anxiety	3	5.4
	Psychotic Disorder	13	23.6
Types Of Cardiac Disorders	HTN	84	76.3
	CVA	14	12.7
	CAD-ACS	14	12.7
	CAD	26	23.6
	MI	10	9
	Bradycardia	1	0.9

Table 4: Distribution Based on Mini Interview

In this study, the Mini International Neuropsychiatric Interview (MINI) was used to confirm psychiatric diagnoses among cardiac patients. This structured diagnostic tool provided reliable identification of psychiatric disorders based on specific interview questions. Among the 55 cardiac patients with psychiatric conditions, diagnosis was supported using mean scores and standard deviation for each disorder to allow for statistical comparison. Analysis revealed that the highest mean score was observed for bipolar disorder (15.8), followed by psychotic disorder (15.1) and mania (11.6). The lowest mean score was found for anxiety disorders (7.6). These scores indicate the severity and frequency of symptoms as reported during the interview process. A graphical comparison based on these values highlighted bipolar disorder as the most prominent, while anxiety was the least severe in terms of symptom scores. These findings reinforce the clinical relevance of the MINI in diagnosing and comparing psychiatric conditions in cardiac patients.

Psychiatric Disorder	Mean	SD
Mania	11.6	0.55
Bipolar Disorder	15.83	3.37
Psychotic Disorder	15.15	2.88
Ads	8.57	1.55
Anxiety	7.67	0.58
Depression	8.79	1.4

Table 5: Association Of Psychiatric Disorders with Cardiac Disorders

This study compared the presence of psychiatric disorders among patients with various cardiac conditions using mean age and standard deviation, with statistical significance tested via p-values. Patients with psychiatric disorders consistently showed lower mean ages across all cardiac conditions compared to those without psychiatric disorders. Patients with hypertension and psychiatric disorders had a significantly lower mean age (59.02) compared to those without (80.45), with $p < 0.001$, indicating a strong statistical difference. Similar significant differences were observed in CAD ($p < 0.001$), CVA ($p < 0.001$), and MI ($p = 0.003$). The lowest mean age was seen in CAD-ACS (51.00) among psychiatric patients, also statistically significant ($p = 0.033$).

***Sig at 0.001 level, ** Sig at 0.01 level, * Sig at 0.05 level

Cardiac disorders	Psychiatric disorder				P - value
	Present		Absent		
	Mean	SD	Mean	SD	
Hypertension (N=84)	59.02	8.62	80.45	10.86	<0.001***
CAD (N=26)	56.14	6.54	85.16	9.65	<0.001***
CAD-ACS (N=14)	51	12.73	77.75	14.73	0.033**
Myocardial infarction (N=10)	55	4.9	87.67	14.76	0.003*
CVA (N=14)	59.17	6.18	82.88	7.08	<0.001***
Bradycardia (N=1)	-	-	-	-	-

Table 6: Comparison Of Physical and Psychological Domain Score of Cardiac Patients with Psychiatric Disorders in Comparison to Cardiac Patients Without Psychiatric Disorders.

This study compared Quality of Life (QoL) scores between cardiac patients with and without psychiatric disorders using two domains: physical and psychological. In the physical domain, patients with psychiatric disorders had a significantly lower mean score (17.98) compared to those without psychiatric disorders (26.09), with a mean difference of 8.11, and a t-value of 12.307 ($p < 0.001$).

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Similarly, in the psychological domain, patients with psychiatric disorders scored significantly lower (mean = 16.25) than those without (mean = 23.82), with a mean difference of 7.56 and a t-value of 9.790 ($p < 0.001$). These statistically significant differences indicate that psychiatric comorbidities negatively impact both physical and psychological aspects of quality of life in cardiac patients. This highlights the importance of integrated psychosocial interventions in cardiac care to improve overall patient well-being.

***Significant at 0.001 level

Domain Score	Group	Mean	SD	Mean difference	t value	p value
Physical Domain Score	**With psychiatric disorders (N=55)**	17.98	3.19	8.11	12.307	<0.001 ***
	Without psychiatric disorders (N=55)	26.09	3.69			
Psychological Domain Score	**With psychiatric disorders (N=55)**	16.25	4.21	7.56	9.79	<0.001 ***
	Without psychiatric disorders (N=55)	23.82	3.89			

Table 7: Comparison Of Social and Environmental Domain Score of Cardiac Patients with Psychiatric Disorders in Comparison to Cardiac Patients Without Psychiatric Disorders.

This study assessed quality of life (QoL) differences in social and environmental domains between cardiac patients with and without psychiatric disorders. Results show significantly lower social domain scores in patients with psychiatric disorders (mean = 6.85) compared to those without (mean = 10.04), with a mean difference of 3.181 and a t-value of 7.643 ($p < 0.001$). In the environmental domain, patients with psychiatric disorders had a lower mean score (16.91) than those without (22.67), with a mean difference of 5.76 and a t-value of 5.380 ($p < 0.001$).

Domain Score	Group	Mean	Sd	Mean Difference	T Value	p Value
Social Domain Score	**With Psychiatric Disorders (N=55)**	6.85	2.1	3.181	7.643	<0.001 ***
	Without Psychiatric Disorders (N=55)	10.04	2.26			
Environmental Domain Score	**With Psychiatric Disorders (N=55)**	16.91	4.95	5.76	5.38	<0.001 ***
	Without Psychiatric Disorders (N=55)	22.67	6.22			

***Significant at 0.001 level

4.Discussion

This study was conducted on the topic "Assessment of association of psychiatric

disorders on quality of life in patients with cardiac disorders" in the general medicine,

psychiatry and cardiology department of a 450 bedded tertiary care hospital in Kerala

for a period of 6 months by using Mini International Neuropsychiatric Interview

(MINI), WHOQOL-BREF questionnaire. This study aimed to explore the relationship between cardiac health and psychiatric comorbidities by examining clinical, demographic, and quality of life variables among 110 cardiac patients. The sample was evenly divided into two groups: cardiac patients with psychiatric disorders (n_1 = 55) and those without (n_2 = 55).

Findings revealed a higher prevalence of male patients in both groups, suggesting that male gender may be associated with an increased risk of developing cardiac

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disorders, irrespective of psychiatric status which was similar to the study conducted by Alzahrani et al (7). Age distribution analysis showed that patients aged 51–60 years were more likely to present with psychiatric disorders alongside cardiac conditions, while the 71–80 age group had the highest proportion of cardiac patients without psychiatric disorders. Notably, the 61–70 age group represented the majority of all cardiac patients in the study.

Social history assessment highlighted a higher incidence of alcohol use, smoking, and other substance use (e.g., cannabis, tobacco) among patients with psychiatric disorders. Alcohol was the most common factor in both groups, suggesting a potential link between lifestyle behaviors and the co-occurrence of cardiac and psychiatric conditions. In terms of clinical presentation, hypertension was the most prevalent cardiac disorder (76.3%) similar to the study of Alzahrani et al (7), followed by CAD (23.6%), CVA and CAD-ACS (12.7%), myocardial infarction (9%), and bradycardia (0.9%). Among psychiatric conditions, depression was most common (34.5%) which was also seen in the study done by Bahall et al (8), followed by alcohol dependence syndrome (25.4%) and psychotic disorders (23.4%). Less prevalent were bipolar disorder, mania, and anxiety. These findings reinforce previous research indicating that mood disorders and substance-related disorders are frequently observed in patients with chronic physical illnesses, including cardiovascular disease.

To validate psychiatric diagnoses, the Mini International Neuropsychiatric Interview (MINI) was employed. This structured diagnostic tool provided reliable symptom profiling. The highest mean MINI scores were recorded for bipolar disorder (15.8), psychotic disorders (15.1), and mania (11.6), while anxiety had the lowest mean score (7.6), suggesting that more severe psychiatric symptoms are associated with bipolar and psychotic conditions in this population.

Statistical comparisons of cardiac conditions across groups showed that patients with psychiatric disorders consistently had significantly lower mean ages across all types of cardiac disease. For instance, patients with hypertension and psychiatric disorders had a mean age of 59.02, compared to 80.45 in those without, with a highly significant p-value (<0.001). Similar trends were observed in CAD, CVA, MI, and CAD-ACS, indicating that psychiatric comorbidity tends to present earlier in the course of cardiac illness. Quality of life (QoL) assessments revealed a significant decline in patients with psychiatric disorders across all four WHOQOL-BREF domains: physical, psychological, social, and environmental. The physical and psychological domain scores were significantly lower in the psychiatric group (mean scores 17.98 and 16.25, respectively) compared to those without psychiatric comorbidity (26.09 and 23.82). Social domain scores also showed a notable difference (6.85 vs. 10.04), and environmental scores followed the same trend (16.91 vs. 22.67). These differences were all statistically significant ($p < 0.001$), suggesting that psychiatric disorders considerably diminish perceived well-being and daily functioning in cardiac patients.

Taken together, these findings strongly indicate that psychiatric conditions are not only prevalent in cardiac patients but also correlate with earlier onset of cardiac diseases and significantly reduced quality of life. This highlights the need for routine psychiatric screening and integrated psychosocial interventions in cardiac care. Early detection and management of psychiatric symptoms could improve not only mental health outcomes but also physical recovery, adherence to cardiac treatment, and overall patient well-being.

5.Conclusion:

This study reveals that individuals with cardiac disorders have low quality of life if they have psychiatric disorders. We used Mini International Neuropsychiatric Interview [MINI 7 t edition, DSM IV TR, ICD-10] to reconfirm the psychotic disorders. This shows that psychiatric disorder is a risk factor for poor quality of life in cardiac patients. We assessed the quality of life of cardiac patients with and without psychiatric disorders using WHOQOL-BREF and on comparing the domain scores we conclude the cardiac patients with psychiatric disorders have poor QOL. Patient counseling and PIL was given to the cardiac patients. PIL was mostly specific for the cardiac patients and the patient counseling provided based on this helped the patients to get know more about how to improve their health for a better QOL. The cardiac patients with psychiatric disorders require particular attention, social and familial mental, physical emotional support accompanied with adequate life style modifications and medication adherence.

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