

Original Research Article

PSYCHIATRIC CO-MORBIDITIES AND QUALITY OF LIFE IN PATIENTS OF MYOCARDIAL INFARCTION - A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Myocardial infarction (MI) is associated not only with physical morbidity but also with significant psychological distress, which may adversely affect recovery and quality of life (QoL). However, limited data are available regarding psychiatric comorbidities and their impact on QoL among MI patients in North India. The aim is to assess the prevalence of psychiatric comorbidities among patients following first-episode MI and to evaluate their association with quality of life.

Materials and Methods: A hospital-based cross-sectional study was conducted among 70 patients with first-episode MI at Rohilkhand Medical College and Hospital, Bareilly, Uttar Pradesh, from May 2024 to May 2025. Patients aged 18–60 years were assessed 4–6 weeks after the index MI. Psychiatric disorders were evaluated using the Mini International Neuropsychiatric Interview (MINI), and QoL was assessed using the WHOQOL-BREF. Sociodemographic and clinical variables were also recorded. Data were analyzed using SPSS version 23.0.

Results: Psychiatric morbidity was present in 40 (57.14%) patients. Major depressive episode was the most common psychiatric disorder (22.86%), followed by generalized anxiety disorder (17.14%), panic disorder (7.14%), and agoraphobia (2.86%). Lower educational level and nuclear family structure were significantly associated with psychiatric morbidity. Patients with psychiatric disorders had significantly poorer QoL than those without psychiatric morbidity across physical health, psychological health, social relationships, and environmental domains.

Conclusion: Psychiatric comorbidities are common among patients recovering from first-episode MI and are associated with substantial impairment in quality of life. Early identification of depression, anxiety, and other psychiatric disorders should be incorporated into post-MI care, with appropriate psychosocial support and integration of mental health interventions into cardiac rehabilitation.

Keywords: Myocardial infarction; psychiatric comorbidity; depression; anxiety; quality of life; WHOQOL-BREF; MINI; cardiac rehabilitation.

INTRODUCTION

Coronary heart disease stands as a significant contributor to the global disease burden. The lasting impact of an acute myocardial infarction (MI) encompasses both physical and emotional distress,

casting detrimental effects on the daily lives of individuals post-MI. The occurrence of acute myocardial infarction is triggered by the sudden blockage of one or more large epicardial coronary arteries persisting for a duration exceeding 20 to 40 minutes. Typically, this blockage is thrombotic in

nature, resulting from the rupture of a plaque formed within the coronary arteries.^[1]

Indians exhibit a fourfold higher susceptibility to Acute Myocardial Infarction (AMI) in contrast to individuals from other nations, a predisposition attributed to a convergence of genetic and lifestyle elements fostering metabolic dysfunction.² The prevalence of myocardial infarction in India stands at 64.37 per 1000 people.³ The mortality rate associated with myocardial infarction is estimated to be around 30%, with one in 25 surviving patients succumbing within the first year post-AMI after the initial hospitalization.^[2]

Individuals dealing with severe mental illnesses like bipolar disorder or schizophrenia spectrum disorders face an elevated risk of cardiovascular disease-related mortality compared to the general population.^[4-5] A growing amount of studies over the last 20 years has shown that bipolar illness is linked to early death, including a nearly two-fold increased risk of dying from cardiovascular disease and a fifteen-fold increased chance of dying by suicide when compared to the general population.⁴ Assessing the Quality of Life (QoL) has become a progressively crucial benchmark following hospitalization for acute myocardial infarction. Independent risk factors for the physical domain of QoL in post-MI patients include advancing age, female gender, depression, anxiety, and the presence of morbid conditions, as demonstrated by various studies.^[6-9]

Thus, considering the huge impact of psychiatric comorbidities in the overall care of patients with Myocardial Infarction, it is essential to study mental health related aspects in these patients. Moreover, there is a paucity of studies in North India region investigating prevalence of psychiatric comorbidities and quality of life in patients with Myocardial Infarction. In this view this study is aimed to see the association of psychiatric morbidities in patients with MI and how it affects quality of life of individual in order to improve outcome.

MATERIALS AND METHODS

A hospital-based cross-sectional study was conducted at the department of psychiatry, Rohilkhand Medical College and Hospital, Bareilly, Uttar Pradesh, over a one-year period (May 2024 to May 2025). Ethical clearance was obtained from the Institutional Ethics Committee. Written informed consent was secured from all participants. Patient who fulfilled the following criteria were included: Patients with first episode of myocardial infarction, after 4-6 weeks of the index episode, Age between 18 to 60 year. Exclusion Criteria for Patients: Co-existing major or chronic physical illness other than those included in risk factors (Hypertension, Diabetes mellitus, Smoking, Dyslipidaemia, Family h/o CAD, Overweight, Physical inactivity) for MI,

Individuals with previous history of psychiatric disorders, Patients on psychotropic medications except benzodiazepines, Patients due for angioplasty or coronary artery bypass surgery. 70 myocardial infarction patients were studied according to sample size formula for cross-sectional study in finite population. Case record Form was specifically designed for recording information including person's name, age, sex, education, marital status, religion, occupation, state, socioeconomic status, and the type of family they have and took around 5-10 minutes to fill. Clinical Profile form was specifically designed for recording information including site of MI, Thrombolysed or not, Severity of MI (based on EF), coronary risk factors like hypertension, diabetes mellitus, smoking, dyslipidaemia (LDL >100mg%), Family history of CAD, overweight (BMI >25kg/m²), physical inactivity. Following the screening, patients were assessed for psychiatric disorders using the Mini International Neuropsychiatric Interview (MINI)10, a 17-item questionnaire that took approximately 15 minutes to complete. Subsequently, the Quality of Life (QOL) of patients was evaluated using the World Health Organization Quality of Life (WHOQOL-BREF) questionnaire.¹¹ Overall, the total interview time for the entire study was estimated to be 35–40 minutes per participant. The data collected was coded and entered, its clearing and compiling was done on a Microsoft Excel spreadsheet and then it was imported into statistical packaging for social sciences (SPSS) version 23.0 for statistical analysis.

RESULTS

In the present study, most participants with psychiatric disorders were in the 41–55-year age group, highlighting a mid-life vulnerability where the burden of occupational and family stress coexists with cardiac risk factors. The relationship between age and psychiatric morbidity was not statistically significant ($p = 0.71$), suggesting that mental health complications may occur across all adult age ranges post-MI. Mean age of the study participants was 46.30 ± 8.83 years (mean $\pm$ SD), with a range of 30–60 years ($n = 70$).

Males formed the majority (61.4%) of the study population, with psychiatric disorders observed more frequently among them, though the difference was not significant ($p = 0.77$). This reflects the overall male predominance in MI incidence rather than a gender-specific psychiatric predisposition. Almost all participants were married (98.6%), indicating social stability; however, marital status showed no significant association ($p = 0.38$) with psychiatric morbidity.

In summary, none of the demographic variables in this table showed significant χ^2 values, implying that psychiatric morbidity post-MI is not dependent on

basic demographic variables such as age, sex, or marital status.

Table 1: Socio-demographic Characteristics of Participants

Variable	Category	PSYCHIATRIC DISORDERS		Total	p-value	χ^2 value
		With (n=40)	Without (n=30)			
Education	Illiterate	7	5	12	0.006	12.46
	Primary	11	4	15		
	Middle	7	4	11		
	Secondary	8	0	8		
	Intermediate	6	11	17		
	Graduate	1	6	7		
Occupation	Labour	4	0	4	0.05	10.89
	Business	17	12	29		
	Service	5	7	12		
	Housewife	14	11	25		
Family Type	Nuclear	36	22	58	0.03	4.927
	Extended	4	8	12		

Socio-demographic analysis revealed several significant relationships between social factors and psychiatric morbidity. Religion did not significantly affect psychiatric status ($p = 0.51$), with both Hindus and Muslims showing comparable rates. Educational level demonstrated a strong relationship with psychiatric morbidity ($p = 0.006$). Participants with lower education (illiterate or primary level) had a significantly higher prevalence of psychiatric disorders. Occupational analysis indicated that

businesspersons (41.5%) and housewives (35.7%) showed a greater incidence of psychiatric morbidity. This association was borderline significant ($p = 0.05$). Habitat was not significantly related to psychiatric illness ($p = 0.34$), though a higher proportion of rural residents had psychiatric morbidity. Family structure revealed a statistically significant relationship ($p = 0.03$), with participants from nuclear families showing more psychiatric disorders compared to those from extended families

Table 2: Psychiatric Disorders Distribution of Participants

Psychiatric Disorders	Frequency (n)	Percent (%)
Present	40	57.14
Absent	30	42.85
Total	70	100.0

Out of the total 70 myocardial infarction (MI) patients studied, 40 participants (57.14%) were found to have psychiatric disorders, while 30

participants (42.85%) did not exhibit any psychiatric illness.

Table 2: Types of Psychiatric Disorders Distribution of Participants

PSYCHIATRIC DISORDERS	Frequency (n)	Percent (%)
Major depressive episode	16	22.86
Panic disorder	5	7.14
Agoraphobia	2	2.86
Substance dependence (non-alcohol), Substance abuse	2	2.86
Generalized anxiety disorder	12	17.14
Major depressive episode & panic disorder	2	2.86
Major depressive episode & Generalized anxiety disorder	1	1.43
No psychiatric illness	30	42.86
Total	70	100.0

Among the 40 participants diagnosed with psychiatric disorders, the most prevalent was the major depressive episode (22.86%), followed by generalized anxiety disorder (17.14%). Other disorders included panic disorder (7.14%), agoraphobia (2.86%), and substance abuse or

dependence (2.86%). A small number of participants had comorbid psychiatric conditions such as major depressive episode with panic disorder (2.86%) and major depressive episode with generalized anxiety disorder (1.43%). In contrast, 30 participants (42.86%) had no psychiatric illness.

Table 5: General Quality of Life Distribution of Participants

WHOQOL questionnaire findings	PSYCHIATRIC DISORDERS		p-value	t value
	With	Without		
GENERAL QUALITY OF LIFE 1	2.40 $\pm$ 0.62	3.10 $\pm$ 0.60	0.03	2.64
GENERAL QUALITY OF LIFE 2	2.23 $\pm$ 0.57	3.30 $\pm$ 0.94	0.002	3.22
PHYSICAL HEALTH	43.15 $\pm$ 12.30	54.33 $\pm$ 11.16	0.001	2.96
PSYCHOLOGICAL HEALTH	42.20 $\pm$ 11.33	56.90 $\pm$ 11.06	0.002	3.43
SOCIAL RELATIONSHIP	43.80 $\pm$ 12.31	58.53 $\pm$ 12.25	0.04	2.19
ENVIRONMENT	46.25 $\pm$ 10.29	60.20 $\pm$ 11.15	0.01	2.58

The quality-of-life assessment using the WHOQOL questionnaire revealed significant impairment across multiple domains among participants with psychiatric disorders compared to those without.

- The General Quality of Life (mean = 2.40 ± 0.62) was notably poorer in patients with psychiatric illness than those without (3.10 ± 0.60 , $p = 0.03$).
- The Physical Health domain (43.15 ± 12.30 vs. 54.33 ± 11.16 , $p = 0.001$) and Psychological Health domain (42.20 ± 11.33 vs. 56.90 ± 11.06 , $p = 0.002$) both showed statistically significant differences.
- The Social Relationship and Environment domains also demonstrated moderate but meaningful reductions ($p = 0.04$ and $p = 0.01$, respectively).
- Overall, participants with psychiatric disorders had a significantly lower perceived quality of life, indicating that psychological morbidity following MI adversely affects both physical and psychosocial functioning.

DISCUSSION

Our study highlights a high prevalence of psychiatric disorders following first-episode myocardial infarction, with significant impairment in all dimensions of quality of life. In our findings, psychiatric morbidity was present in 57.1% of MI patients, with major depressive episode and generalized anxiety disorder being the most common diagnoses. These disorders are influenced by both clinical severity and socio-demographic context. In the present study, age, gender, marital status, and occupational status were not significantly associated with psychiatric morbidity following myocardial infarction, suggesting that psychological disorders may occur irrespective of these demographic factors. Similar findings were reported by Shruthi et al.^[12] whereas Worcester et al.^[8] and Ho et al.^[6] observed poorer psychological outcomes among women and older adults, respectively. Educational status showed a significant association, with less educated patients demonstrating higher psychiatric morbidity, possibly due to lower health literacy and poorer coping abilities. Family type was also significant, as patients from nuclear families had a higher prevalence of psychiatric disorders than those from joint families, highlighting the protective role of social support during recovery. However, Beck et al.^[13] Wang et al.^[14] Bielawa et al.^[15] and Mbakwem et al.^[16] reported that educational status and family structure were not consistently associated with psychological outcomes. Overall, the findings suggest that psychosocial factors such as education and family support may play a greater role in post-MI psychiatric morbidity than basic demographic characteristics.

Quality of life was significantly poorer across all domains in those with psychiatric disorders, and

clinical severity markers—including anterior wall MI, thrombolysis, ST-segment elevation, MI severity, dyslipidemia, and overweight—showed strong associations. The results emphasize the necessity of routine mental-health screening in cardiology settings, integration of psychological counseling within cardiac rehabilitation, and involvement of family members in the recovery process.^[12,17-23] Conversely, several studies have reported lower prevalence of psychiatric disorders after MI and minimal impact on QoL. John.^[24] found that many ischemic heart disease patients displayed relatively preserved psychological functioning, suggesting lower psychiatric burden in some populations. Lane et al.^[25] demonstrated that some MI survivors maintained stable QoL even with mild depressive or anxious symptoms, indicating that not all patients experience significant psychiatric decline following MI.

In the present study, a total of seventy patients with first-episode myocardial infarction (MI) were evaluated four to six weeks after the index event to determine the prevalence of psychiatric comorbidities and their impact on quality of life. The purpose was to assess how frequently mental-health disturbances occur in the early recovery phase and to what extent they influence overall well-being. Our results revealed that 57.1% of participants had at least one psychiatric disorder. John et al. found a high prevalence of depression and anxiety among patients with ischemic heart disease. Similarly, Lloyd and Cawley (1982) reported a high prevalence of psychiatric morbidity, particularly depression and anxiety, following myocardial infarction, emphasizing the need for psychological assessment during cardiac rehabilitation.^[24,26]

Among the psychiatric disorders, major depressive episode (22.9%) and generalized anxiety disorder (17.1%) were the most common diagnoses. Feng et al.^[18] in a large meta-analysis, reported post-MI depression in approximately one-third of patients, Wen et al.^[19] demonstrated that anxiety following MI increased the risk of adverse cardiovascular outcomes, including recurrent cardiac events, heart failure, hospitalization, and mortality, by 23% in the short term and 27% in the long term. The magnitude of psychiatric morbidity in our study aligns closely with the findings of Patel et al.^[20] and Shruthi et al.^[12] both of whom emphasized that psychological distress frequently persists for several months after MI, reflecting the combined effects of post-MI biological changes, including inflammatory and neuroendocrine alterations, together with psychosocial stressors such as fear of recurrence, functional impairment, financial burden, and reduced social support. Thombs et al.^[27] reported a substantially lower prevalence of depression following MI and suggested that variations in study methodology, diagnostic approaches, timing of assessment, and patient characteristics may account for the differences in reported rates of psychiatric

morbidity across studies. Additionally, Ho et al,^[7] found that patients aged 65 years and above had better quality of life and fewer symptoms after myocardial infarction compared with younger patients.

Addressing mental health after MI is pivotal for achieving holistic patient care. Early detection and timely management of depression and anxiety can improve adherence to lifestyle modifications, enhance rehabilitation participation, and ultimately contribute to better cardiac prognosis. In our study, addressing psychiatric morbidity is especially important because it significantly lowered QoL across all domains. The incorporation of psychosocial assessment into routine follow-up allows clinicians to identify at-risk individuals and implement timely interventions, transforming recovery from a purely biomedical process into a truly biopsychosocial one.^[22] Sunamura et al,^[28] demonstrated that long-term survival after acute coronary syndrome improved significantly with cardiac rehabilitation, regardless of baseline emotional distress. Tegn et al,^[29] found that invasive treatment improved clinical outcomes in elderly patients with acute coronary syndrome but did not significantly affect psychological problems.

Our study also assessed quality of life using the WHOQOL-BREF instrument, showing that participants with psychiatric comorbidity had significantly lower scores across all domains i.e. physical, psychological, social, and environmental. The reduction in quality of life among depressed or anxious patients can be attributed to multiple interrelated mechanisms justified by other studies too.^[19,20] In contrast to our findings, some studies have reported no significant differences in quality of life between cardiac patients with and without psychiatric comorbidity, indicating variability in the relationship between psychiatric morbidity and QoL across different populations and settings. Ma et al.³⁰ demonstrated limited influence of psychological variables on overall QoL once cardiac functional status was controlled. Mori et al,^[31] similarly reported that older adults showed comparable QoL trajectories after MI regardless of emotional health status, suggesting that aging-related adaptations may buffer QoL decline.

CONCLUSION

In conclusion, this study demonstrates that psychiatric comorbidities are common and clinically significant among post-myocardial infarction patients and are associated with a substantial reduction in quality of life. Factors such as lower educational level, nuclear family structure, severe MI, dyslipidemia, and overweight were significant predictors of psychological distress. Early psychiatric screening, psychosocial counseling, and integrated cardiac-psychiatric rehabilitation programs should be prioritized to achieve optimal

recovery and prevent long-term disability. By addressing both the physical and psychological dimensions of cardiac illness, healthcare systems can substantially improve the overall quality of life and prognosis of patients recovering from myocardial infarction.

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