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Original Research Article

An Analysis of Depressive Symptoms among Post Percutaneous Coronary Intervention Patients with Acute Coronary Syndrome

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Abstract: Depression is a common comorbidity among patients recovering from acute coronary syndrome (ACS) and undergoing percutaneous coronary intervention (PCI). Recent research highlights a significant prevalence of depressive symptoms post-PCI, which can impede recovery and adversely affect long-term cardiovascular outcomes. This article explores current prevalence data, risk factors, pathophysiological mechanisms, clinical outcomes, and recommendations for screening and management of depression in ACS patients post-PCI, drawing on major international studies and population-specific findings.

Keywords: Depression, Acute Coronary Syndrome, Percutaneous Coronary Intervention, Cardiovascular Outcomes, Mental Health Screening.

INTRODUCTION

Acute coronary syndrome (ACS) represents a spectrum of severe myocardial ischemic conditions, often requiring urgent intervention. Percutaneous coronary intervention (PCI) has revolutionized ACS treatment, improving survival and cardiac function. However, the psychological aftermath, particularly depressive symptoms, remains underestimated in clinical practice despite a growing body of evidence that links depression to adverse cardiovascular outcomes in this population[1][2].

Depression amplifies the risk of cardiac morbidity, mortality, and recurrent events by influencing physiological, behavioral, and social factors. Early recognition and management of depressive symptoms are thus essential components of comprehensive post-PCI care in patients with ACS[1][2].

PREVALENCE OF DEPRESSIVE SYMPTOMS POST-PCI

Multiple studies document high rates of depressive symptoms in CAD and ACS patients after PCI, with prevalence estimates varying based on population, timing post-procedure, and assessment tool.

- A major cross-sectional study found that 34% of CAD patients exhibited moderate to severe depressive symptoms ten days after PCI, with an additional 45.1% having mild symptoms and only 20.9% categorized as normal[1].

- Other international comparisons report depression prevalence in post-PCI patients ranging from **17% to 53%**, depending on the assessment method and cohort characteristics[1].

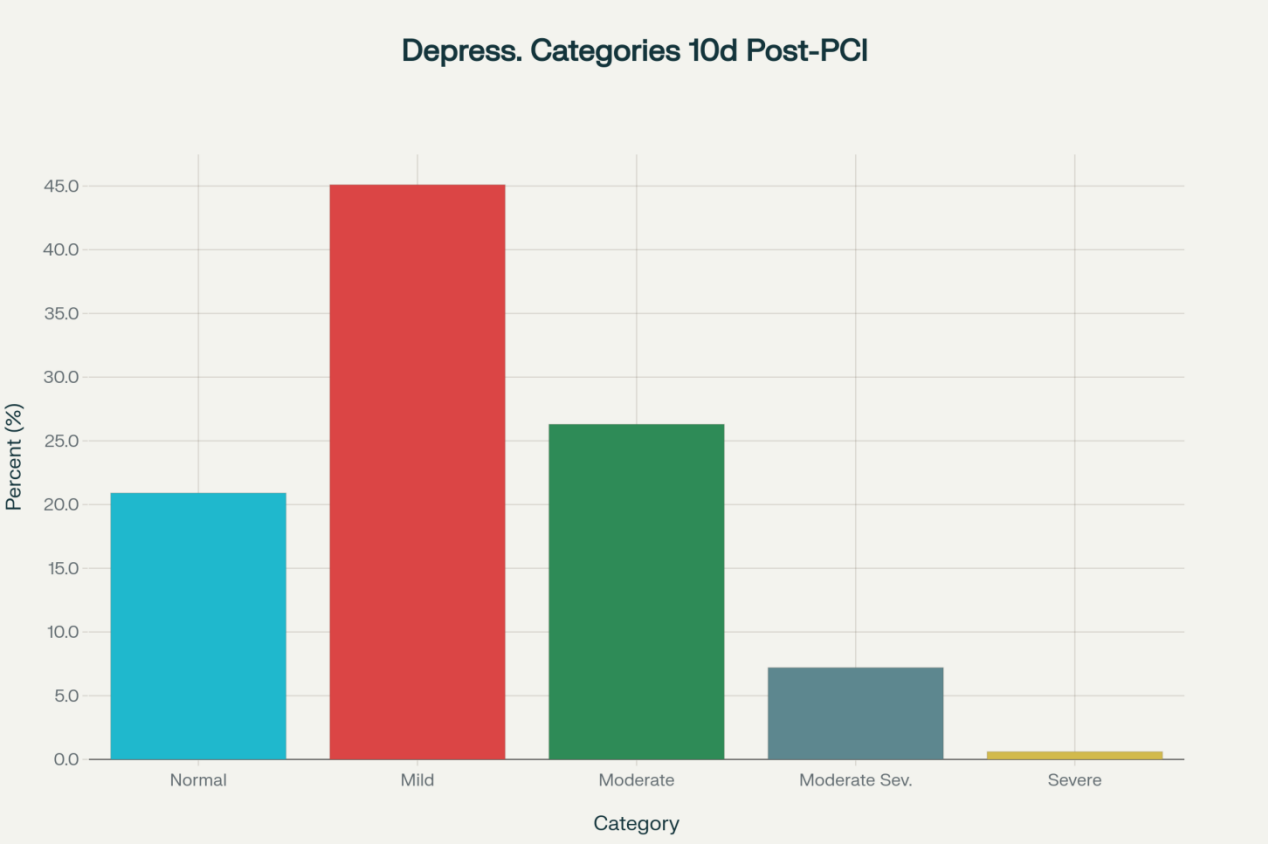
Prevalence rates summarized from key studies:

Author/Year	Country	Setting	Sample Size	Female %	Tool	Prevalence (%)
Rawashdeh et al., 2021	Jordan	Outpatient	335	24.8	PHQ-9	34
Al-Zaru et al., 2020	Jordan	Outpatient	174	48.3	CDS	53.4
Alkafaji et al., 2020	Iraq	Inpatient	120	36.7	BDI	48.3
Shiotani et al., 2002	Asia	Inpatient	1042	19.4	SDS	42
Myers et al., 2012	Israel	Inpatient	632	–	BDI	27.8
Seecheran et al., 2019	Trinidad/Tob.	Outpatient	1203	52.5	PHQ-9	25

Symptom Severity Distribution

Among post-PCI CAD patients, symptom severity often clusters in the mild to moderate range. Data from a prospective study are illustrated below:

- **Normal (20.9%)**
- **Mild depression (45.1%)**
- **Moderate depression (26.3%)**
- **Moderately severe depression (7.2%)**
- **Severe depression (0.6%)**



Prevalence of Depressive Symptom Severity Among CAD Patients 10 Days After PCI[2].

These data emphasize that nearly three-quarters of patients report some depressive symptoms in the early weeks after intervention[1].

Risk Factors for Depression After PCI

Patient-Related Factors

- **Female gender:** Women consistently show higher rates of post-PCI depression.
- **Lower educational attainment:** Individuals with less formal education face increased depressive risk.
- **Diabetes mellitus:** Diabetic patients are at significantly higher risk for depression post-procedure[1][2].

Additional risk factors include hypertension, obesity, poor cardiac function, and lack of social support, though findings vary across populations. Smoking status and prior history of CAD do not consistently predict depressive outcomes after controlling for covariates[1].

Clinical and Procedural Factors

- **ACS severity:** More severe initial cardiac damage and multi-vessel disease correlate with higher depressive scores[2].
- **Duration and invasiveness of procedure:** Complex or prolonged interventions may affect psychological recovery.
- **Inadequate mental health support pre- or post-PCI.**

Pathophysiological Mechanisms

Several overlapping pathways connect depression and adverse outcomes post-PCI:

- **Inflammation:** Depressive states increase systemic inflammatory markers (e.g., CRP, interleukins), exacerbating atherosclerosis[2].
- **Autonomic dysfunction:** Depression impairs vagal activity, reduces heart rate variability, and is associated with arrhythmic risks.
- **Platelet and endothelial dysfunction:** Hyperactive platelet aggregation and endothelial dysfunction are more prevalent with comorbid depression[2].
- **Neuroendocrine changes:** Dysregulation of the hypothalamic-pituitary-adrenal axis elevates cortisol, worsening cardiovascular risk.
- **Behavioral patterns:** Poor medication adherence, lack of exercise, smoking, and unhealthy diets contribute to both depressive states and cardiac events.

Impact on Clinical Outcomes

- **Increased morbidity and mortality:** Depressive symptoms post-PCI are associated with a **57% higher risk** of adverse cardiac outcomes and a **43% higher risk of mortality** over several years of follow-up[3][4][5][2].
- **Impaired recovery and quality of life:** Depressed patients experience slower return to daily activities, more hospital readmissions, and poorer self-reported health.
- **Elevated health care utilization and costs.**

Importantly, depression after PCI remains an **independent predictor** of major adverse cardiovascular events and mortality, even after adjusting for physical and clinical variables[2].

Screening and Diagnosis

Validated instruments such as the Patient Health Questionnaire-9 (PHQ-9), Beck Depression Inventory (BDI), Hospital Anxiety and Depression Scale (HADS), and Cardiac Depression Scale (CDS) are widely used for assessment in cardiac populations. The American Heart Association and European Society of Cardiology both advocate routine depression screening in ACS and post-PCI patients[2].

- **Early phase:** PHQ-2 for initial screening, followed by comprehensive tools for positive cases.
- **Where possible**, psychiatric evaluation is recommended for patients with moderate to severe symptoms or unclear diagnosis.

Management Strategies

Non-Pharmacological Interventions

- **Cardiac rehabilitation with integrated psychological support** improves both mood and physical outcomes.
- **Cognitive behavioral therapy (CBT), counseling, and psychoeducation** are effective, especially for mild to moderate depression.
- **Exercise** is beneficial for both depression and cardiovascular health.

Pharmacological Management

- **Selective serotonin reuptake inhibitors (SSRIs), especially sertraline and escitalopram**, are considered safe and effective for post-ACS depression.

- **Avoidance of tricyclic antidepressants** and monoamine oxidase inhibitors due to adverse cardiac side effects.
- **Integrated care**—collaborative management by cardiologists, psychiatrists, and primary care physicians.

Barriers and Recommendations

- **Underdiagnosis and undertreatment:** Many post-PCI patients go unrecognized and untreated for depression[1][2].
- **Provider education:** Enhanced awareness about the cardiac implications of depression and training on appropriate screening/management.
- **Policy:** Healthcare systems should incorporate routine mental health assessments into cardiology departments and post-discharge planning.

DISCUSSION

Despite PCI's clear benefits for treating the acute physiologic insult of ACS, long-term prognosis is influenced markedly by neuropsychological factors such as depression. As the evidence underscores, one in three to one in two patients develop significant depressive symptoms post-PCI, and these symptoms are often persistent unless proactively treated[1][2]. Female and diabetic patients, in particular, represent high-risk subgroups that require special attention. Integrating mental health support into cardiac rehabilitation programs is a vital, evidence-based strategy to enhance survival, recovery, and quality of life.

CONCLUSION

Depressive symptoms after PCI for ACS are common, multifactorial, and have substantial implications for recovery and long-term cardiac health. Given the strong risk for adverse outcomes, early identification and targeted interventions are paramount. Policy and practice should evolve to routinely recognize and treat depression as integral to optimal cardiac care.

REFERENCES

1. Rawashdeh, Sukaina I., et al. “Prevalence Estimates, Severity, and Risk Factors of Depressive Symptoms among Coronary Artery Disease Patients after Ten Days of Percutaneous Coronary Intervention.” Clin Pract Epidemiol Ment Health, vol. 17, 2021, pp. 103–113. PMC8493832.
2. Pan, Rong. “Depression Following Acute Coronary Syndrome: A Review.” Rev. Cardiovasc. Med., vol. 24, no. 9, 2023, p. 247.

