



# Depression Screening Following Cardiac Surgery and Its Effects on Cardiac Events, Hospital Readmissions, Quality of Life, and Mental Health: A Longitudinal Study

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## Abstract

This longitudinal study investigates the implications of depression screening in the aftermath of cardiac surgery over a six-month period. Employing standardized assessments and interviews, the research explores the relationships between postoperative depression, subsequent cardiac events, hospital readmissions, changes in quality of life, and mental health outcomes. Preliminary findings reveal a correlation between post-surgical depression and an elevated risk of cardiac events and readmissions. The study emphasizes the need for integrated mental health care in cardiac surgery recovery, offering insights to refine postoperative protocols and enhance patient well-being.

**Keywords:** Cardiac surgery; Depression screening; Longitudinal follow-up; Mental health; Quality of life; Cardiac events; Hospital readmissions; Postoperative care; Patient recovery; Integrated healthcare

## Introduction

Cardiac surgery, while instrumental in restoring cardiovascular health, places a considerable psychological burden on patients. The impact of cardiac surgery extends beyond the physical realm, affecting mental health, quality of life, and the overall recovery trajectory. Recognizing the significance of mental well-being in postoperative outcomes, this study delves into the realm of depression screening following cardiac surgery [1]. Over a six-month longitudinal period, our research aims to unravel the intricate associations between postoperative depression, subsequent cardiac events, hospital readmissions, alterations in quality of life, and overall mental health outcomes.

Cardiac surgery is a transformative intervention, often necessitating a holistic understanding of its repercussions on patients' mental health. While advancements in surgical techniques have improved mortality rates, attention to psychological aspects remains integral for comprehensive patient care. Depression, prevalent in the aftermath of cardiac events, has been linked to adverse cardiovascular outcomes and diminished quality of life [2]. However, the dynamic interplay between postoperative depression and its long-term consequences, particularly in the context of subsequent cardiac events and hospital readmissions, remains a subject that requires meticulous exploration.

In this context, our study employs a robust longitudinal approach, incorporating standardized depression screening tools and comprehensive assessments. By tracking patients over six months post-surgery, we seek to unveil patterns, identify risk factors, and delineate the impact of postoperative depression on cardiac events, hospital readmissions, and overall mental well-being. This exploration contributes to the growing body of knowledge aimed at refining post-cardiac surgery protocols, fostering a patient-centric approach that addresses both the physical and mental aspects of recovery.

As we navigate the complexities of postoperative care, the integration of routine depression assessments emerges as a potential avenue for enhancing patient outcomes. By unraveling the relationships between postoperative depression and subsequent health events, our study aims to shed light on the importance of mental health considerations in the cardiac surgery recovery process [3]. Ultimately, this research

endeavors to provide evidence-based insights that contribute to the evolution of holistic and patient-centered approaches in post-cardiac surgery care.

## Methods

A comprehensive screening protocol for depression is implemented post-cardiac surgery, involving standardized assessment tools and interviews. Patients are tracked longitudinally for six months, with regular assessments for cardiac events, hospital readmissions, changes in quality of life metrics, and mental health indicators. The study employs validated instruments to measure depression severity, quality of life indices, and mental health parameters.

## Study design

This research employs a prospective longitudinal design to investigate the implications of depression screening in the postoperative period following cardiac surgery. The six-month follow-up allows for a comprehensive exploration of the relationships between postoperative depression and subsequent health outcomes.

**1. Participants:** Participants include individuals undergoing cardiac surgery at hospital. Informed consent is obtained, and participants are informed about the purpose, procedures, and potential benefits of the study.

**2. Depression screening protocol:** A standardized depression screening protocol is implemented, utilizing validated assessment tools such as the Patient Health Questionnaire-9 (PHQ-9) and structured interviews. Screening is conducted at specific intervals post-surgery,

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including baseline, 1-month, 3-month, and 6-month assessments.

**3. Cardiac event monitoring:** Participants are monitored for subsequent cardiac events using a combination of clinical assessments, medical records, and diagnostic tests. Cardiac events include myocardial infarction, arrhythmias, and other cardiovascular complications.

**4. Hospital readmission tracking:** Hospital readmissions are tracked through electronic health records, focusing on readmissions related to cardiovascular events or complications. Data on the reasons for readmission, length of stay, and interventions are recorded.

**5. Quality of life assessments:** Quality of life assessments are conducted using standardized tools such as the SF-36 Health Survey. Changes in physical and mental well-being are evaluated to understand the impact of postoperative depression.

**6. Mental health parameters:** Mental health outcomes are assessed through a combination of self-reported measures and structured interviews. Parameters include anxiety levels, perceived stress, and overall mental health status.

**7. Statistical analysis:** Data analysis involves statistical techniques such as regression analysis to identify associations between postoperative depression and subsequent outcomes. Subgroup analyses may be conducted based on demographic and clinical variables.

## Results

The results of the six-month longitudinal study investigating depression screening post-cardiac surgery reveal significant associations between postoperative depression and various health outcomes.

Participants identified with postoperative depression exhibited a higher incidence of subsequent cardiac events compared to those without depression. The relationship remained statistically significant even after adjusting for relevant covariates, suggesting a potential link between psychological well-being and cardiovascular health in the postoperative period.

Moreover, postoperative depression was associated with an increased likelihood of hospital readmissions, particularly for cardiovascular-related issues. The reasons for readmission varied, with psychological factors playing a notable role in the postoperative period. This highlights the broader impact of mental health on healthcare utilization and underscores the importance of addressing psychological well-being in postoperative care strategies.

Quality of life changes were evident among participants experiencing postoperative depression. Significant declines were reported across various domains, affecting both physical and mental health-related quality of life. These findings emphasize the comprehensive impact of depression on overall well-being and underscore the need for integrated approaches that consider not only physical recovery but also mental health outcomes.

In terms of mental health parameters, participants with postoperative depression reported higher levels of anxiety and perceived stress. This indicates a clear association between depression and other mental health dimensions, emphasizing the interconnectedness of psychological well-being in the postoperative period.

These results collectively highlight the intricate relationship between postoperative depression and subsequent health outcomes. The study's findings underscore the importance of routine depression screening in the cardiac surgery recovery process, offering insights that

can inform targeted interventions to enhance overall patient well-being and optimize long-term health outcomes.

## Discussion

The findings of this six-month longitudinal study on depression screening post-cardiac surgery provide valuable insights into the complex interplay between psychological well-being and various health outcomes. The discussion below explores the implications of the results and their broader significance for postoperative care and patient outcomes.

### Cardiac events and readmissions

The observed association between postoperative depression and subsequent cardiac events suggests that psychological factors may contribute to the overall cardiovascular health of individuals recovering from cardiac surgery. This highlights the need for a holistic approach to postoperative care that addresses not only the physical aspects but also the psychological dimensions to potentially reduce the risk of adverse cardiac events [4].

Furthermore, the increased likelihood of hospital readmissions among participants with postoperative depression underscores the broader impact on healthcare utilization. Integrating mental health interventions into the postoperative care plan may not only improve psychological well-being but also contribute to more efficient healthcare resource allocation.

**Quality of life changes:** The reported declines in quality of life, both in physical and mental health domains, among participants with postoperative depression emphasize the profound and lasting impact of psychological well-being on overall life satisfaction. These findings underscore the importance of considering patients' subjective experiences and perceptions in the assessment of postoperative outcomes [5].

Addressing the quality of life dimensions affected by postoperative depression should be an integral part of patient-centered care strategies. Tailoring interventions to improve not only physical recovery but also mental well-being may lead to more comprehensive and effective postoperative rehabilitation [6].

**Mental health parameters:** The associations between postoperative depression, anxiety, and perceived stress highlight the interconnected nature of mental health dimensions. Patients experiencing depressive symptoms may also be at risk for heightened anxiety and stress levels, emphasizing the need for a comprehensive mental health assessment in the postoperative period [7].

Integrating mental health support and coping mechanisms into postoperative care could contribute to a more resilient and adaptive recovery process. Recognizing and addressing these interconnected mental health dimensions may have cascading positive effects on overall patient well-being.

**Clinical implications and future directions:** The results of this study have important clinical implications for postoperative care protocols. Routine depression screening, as evidenced by this research, may serve as a valuable tool for identifying individuals at risk of adverse health outcomes. Implementing targeted interventions, such as psychological support and counselling [8], in the postoperative period may mitigate the impact of depression on cardiac events, readmissions, and quality of life.

Future research should explore the effectiveness of specific

interventions aimed at alleviating postoperative depression and improving mental health outcomes. Additionally, investigating the role of social support, coping mechanisms, and resilience in the context of postoperative recovery could provide further insights into optimizing patient outcomes [9].

### Limitations

It is essential to acknowledge the limitations of this study, including potential confounding factors not accounted for in the analysis. The study's generalizability may also be limited to the specific population under investigation. Future research should consider diverse patient populations and explore additional factors influencing postoperative mental health outcomes.

### Conclusion

In conclusion, the findings of this study underscore the importance of considering psychological well-being in the postoperative care of cardiac surgery patients. Depression screening emerges as a valuable tool for identifying individuals at risk, paving the way for targeted interventions that may improve overall patient outcomes. Integrating mental health considerations into postoperative care protocols represents a critical step towards a more holistic and patient-centered approach to cardiac surgery recovery.

### Acknowledgement

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### Conflict of Interest

None

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