

## Abstract

This study presents a literature review examining long-term adherence to lifestyle and medical recommendations following cardiac surgery. While surgical procedures often improve immediate health outcomes, long-term recovery largely depends on patients maintaining recommended behaviors such as regular physical activity, medication adherence, and heart-healthy dietary practices. However, many patients struggle to sustain these changes after the initial recovery period. Peer-reviewed clinical studies and scholarly literature were analyzed to identify common barriers to adherence and trends in patient behavior during long-term recovery. The reviewed research highlights several key factors influencing adherence, including patient motivation, psychological well-being, physical limitations during recovery, access to cardiac rehabilitation programs, and the level of social support available to patients. By synthesizing existing research, this review aims to better understand the challenges patients face in maintaining recovery behaviors after cardiac surgery. Identifying these patterns may help inform improved post-surgical support strategies, patient education efforts, and healthcare interventions designed to promote sustained recovery and better long-term cardiovascular outcomes.

## Methods

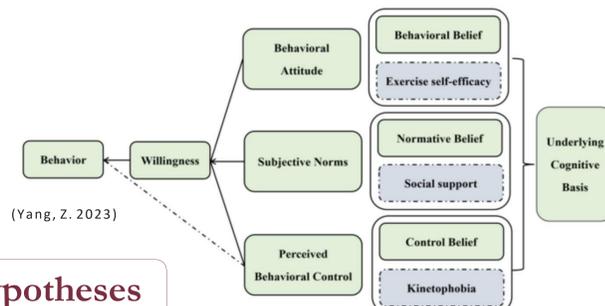
This literature review used an integrative review design to explore factors influencing long-term adherence to lifestyle modifications and cardiac rehabilitation following cardiac surgery. This approach was chosen as it allows for the inclusion of different types of studies, providing a well-rounded understanding of the topic. A search of the electronic databases CINAHL, MEDLINE, PsychINFO, Scopus, and Embase was conducted. Search terms included combinations of the following keywords: "cardiac surgery," "coronary artery bypass grafting," "percutaneous coronary intervention," "cardiac rehabilitation," "lifestyle modifications," "physical activity," "adherence," "barriers," and "facilitators." Studies were included if they were published in English, involved adult patients who had undergone cardiac surgery, and looked at factors related to adherence to lifestyle modifications or cardiac rehabilitation. Studies were excluded if they focused only on medication adherence, involved children or adolescents, or were not available in full text. Studies were first screened by title and abstract, followed by a full-text review to confirm eligibility. Information was then extracted from each included study, capturing details on study design, sample characteristics, and key findings related to facilitators and barriers to adherence.

## Discussion

This review aimed to identify factors influencing long-term adherence to lifestyle modifications and cardiac rehabilitation following cardiac surgery. The findings highlight that adherence remains consistently poor across post-surgical populations, driven by a complex mix of personal, psychological, and socio-environmental factors. The high rates of non-adherence identified are concerning given the well-established benefits of healthy lifestyle behaviors in reducing cardiovascular mortality. This suggests that surviving a cardiac event alone is not sufficient motivation for lasting behavior change, and that structured support is essential in the postoperative period. Exercise self-efficacy and perceived social support emerged as the strongest facilitators of adherence, consistent with the theory of planned behavior, which highlights an individual's confidence and perceived support as key drivers of sustained behavior change. Cardiac rehabilitation programs appear well positioned to address both factors simultaneously, and were particularly beneficial for patients experiencing anxiety, pessimism, and low resilience. Fear of physical activity was one of the most significant barriers identified, particularly among older patients and those with multiple chronic diseases. This fear is counterproductive given the well-documented benefits of physical activity for cardiovascular recovery. Patient education and gradual supervised exercise may help address this. The finding that highly optimistic patients showed worse dietary adherence is also noteworthy, suggesting that these patients may underestimate the sustained effort required for dietary change and may benefit from more focused monitoring. Socio-environmental barriers such as limited finances, poor access to services, and busy schedules further highlight the need for flexible rehabilitation models such as home-based programs. However, adherence to home-based programs also remains low, indicating that regular follow-up and professional support remain necessary.

## Introduction

Cardiovascular disease remains the leading cause of death globally, placing a significant burden on individuals and healthcare systems alike. Surgical interventions such as coronary artery bypass grafting and percutaneous coronary intervention have improved survival rates, however long-term outcomes depend greatly on patients maintaining healthy lifestyle behaviors after surgery. These behaviors, including regular physical activity, healthy eating, smoking cessation, and adequate sleep, are well recognized as essential components of cardiovascular disease prevention and recovery. Despite their importance, adherence to lifestyle modifications following cardiac surgery remains consistently poor. Research shows that a large proportion of patients fail to meet recommended dietary and exercise guidelines after surgery, with psychological factors, fear of physical activity, comorbidities, and low self-efficacy identified as common barriers. Cardiac rehabilitation programs have shown promise in supporting patients through this process, yet participation and long-term engagement remain low. Understanding the factors that influence adherence after cardiac surgery is important for developing effective, targeted support strategies for this patient population. This review examines the current evidence on the facilitators and barriers to long-term adherence to lifestyle modifications and cardiac rehabilitation following cardiac surgery.

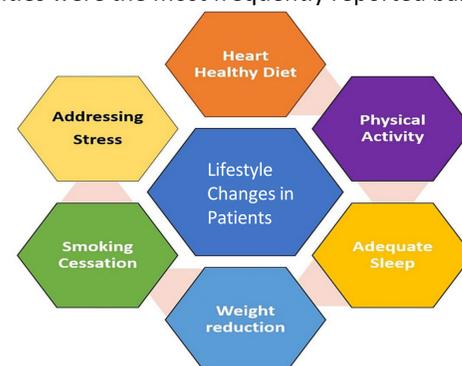


## Hypotheses

Patients who report higher levels of self-motivation and stronger social support will demonstrate greater long-term adherence to recommended exercise, diet, and medication routines following cardiac surgery compared to patients with lower motivation and limited support.

## Results

A total of five studies were included in this review, varying in design and including cross-sectional studies, integrative reviews, and cohort studies. Populations included patients who had undergone coronary artery bypass grafting, percutaneous coronary intervention, and patients with chronic heart failure. Several factors were found to support adherence following cardiac surgery. Exercise self-efficacy and perceived social support were the strongest facilitators, together explaining approximately 26.6% of the variance in adherence to home-based cardiac rehabilitation. Participation in structured cardiac rehabilitation programs also emerged as a key facilitator, particularly for patients experiencing anxiety, pessimism, and low resilience. Non adherence to lifestyle modifications such as smoking, not getting sufficient sleep and a non healthy diet. was common across the included studies, with approximately 45% of patients non-adherent to dietary recommendations and 41% non-adherent to exercise following coronary artery bypass grafting. Fear of physical activity was a significant barrier, accounting for approximately 23.6% of the variance in adherence. Additional barriers included comorbidities, limited finances, poor access to services, busy schedules, and forgetfulness. Male sex was the most common predictor of physical activity, while comorbidities were the most frequently reported barrier overall.



## Conclusions

Long-term adherence to lifestyle modifications and cardiac rehabilitation following cardiac surgery remains a significant challenge. This review identified exercise self-efficacy, perceived social support, and participation in structured cardiac rehabilitation programs as key facilitators of adherence, while fear of physical activity, comorbidities, and socio-environmental barriers were the most commonly reported obstacles. These findings highlight the need for individualized, multidisciplinary approaches that address both the psychological and practical needs of post-surgical cardiac patients. Future research should focus on developing targeted interventions that improve long-term adherence and ultimately reduce the burden of cardiovascular disease.

## References

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