

Exercise-based Cardiac Rehabilitation Outcomes in Elderly Coronary Patients

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Introduction

Exercise-based Cardiac Rehabilitation (CR) has emerged as a cornerstone in the secondary prevention of Coronary Artery Disease (CAD), particularly in elderly populations who are at increased risk of recurrent cardiac events, functional decline and mortality. With aging comes a host of physiological changes including reduced cardiorespiratory fitness, increased arterial stiffness and comorbidities such as diabetes, hypertension and frailty, all of which complicate post-cardiac event recovery. Despite these challenges, numerous studies demonstrate that elderly patients not only tolerate exercise-based CR programs well but also derive substantial clinical, functional and psychosocial benefits. The shift toward including older adults in structured CR protocols reflects an evolving understanding of aging, physical activity and cardiovascular resilience. This paper examines the evidence surrounding exercise-based cardiac rehabilitation outcomes in elderly coronary patients, exploring its impact on functional capacity, quality of life, morbidity and mortality and health system utilization [1].

Description

One of the most profound benefits of exercise-based cardiac rehabilitation in elderly patients is the improvement in functional capacity, often measured by peak oxygen uptake ($\text{VO}_2 \text{ max}$), six-minute walk tests and Metabolic Equivalents (METs). Older adults who participate in structured aerobic and resistance training programs post-myocardial infarction or coronary revascularization demonstrate significant gains in physical endurance, mobility and independence. These improvements are not merely academic but translate into practical benefits such as enhanced ability to perform activities of daily living, reduced risk of falls and prolonged independent living. Randomized controlled trials and meta-analyses, including data from the American Heart Association and European Society of Cardiology, consistently report that elderly patients can achieve a 15–25% improvement in functional performance after completing a standard 12-week CR program, with further gains possible in long-term maintenance phases. These functional outcomes are especially critical given the risk of deconditioning and sarcopenia in aging populations, which can spiral into frailty, hospitalization and institutionalization if left unaddressed. Psychosocial benefits are another important dimension of exercise-based CR outcomes in elderly coronary patients. Cardiac events often trigger or exacerbate psychological conditions such as depression, anxiety and fear of exertion, which are particularly debilitating in older populations with limited social support or cognitive impairment. Exercise interventions integrated with psychological counseling and education help reduce depressive symptoms, improve mood and enhance social connectedness. Group-based exercise sessions in CR settings create opportunities for peer interaction, support networks and structured routines, which are vital for emotional well-being and compliance. Studies have shown that elderly participants in CR programs exhibit significant improvements in quality of life scores, as measured by tools such as the SF-36 and MacNew Heart Disease Quality of Life Questionnaire.

These gains
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in psychological health are closely linked with better adherence to medications, dietary changes and long-term lifestyle modifications, thereby amplifying the holistic benefits of CR.

Mortality and morbidity reduction is another key outcome associated with exercise-based cardiac rehabilitation in the elderly. Although age itself is a risk factor for worse cardiovascular outcomes, participation in CR programs has been shown to mitigate this risk by improving hemodynamic profiles, enhancing myocardial perfusion and stabilizing atherosclerotic plaques. Elderly patients who complete exercise-based CR have a lower incidence of recurrent myocardial infarction, reduced need for repeat revascularization and significantly decreased all-cause and cardiovascular mortality compared to non-participants. Large cohort studies such as those from the National Cardiovascular Data Registry and the Medicare-linked programs have demonstrated a 20–30% reduction in mortality among elderly patients engaging in CR, even after adjusting for comorbidities and baseline functional status. The mechanistic benefits of exercise ranging from improved endothelial function to anti-inflammatory effects are particularly relevant in older adults who may not be ideal candidates for aggressive pharmacotherapy or surgical interventions due to frailty or polypharmacy concerns [2].

Conclusion

Exercise-based cardiac rehabilitation offers substantial, multidimensional benefits for elderly coronary patients, enhancing functional capacity, psychological well-being, cardiovascular outcomes and healthcare efficiency. Far from being too frail or high-risk, elderly individuals represent a population that may benefit most from structured exercise interventions, given their vulnerability to deconditioning, recurrent events and loss of independence. Despite current underutilization, the evidence strongly supports expanding access to and participation in, CR programs among older adults through policy reforms, clinical advocacy and innovative delivery models. As global populations continue to age and the burden of coronary disease grows, integrating exercise-based cardiac rehabilitation into standard post-cardiac care for the elderly is not just clinically sound it is imperative for sustainable, equitable cardiovascular health systems.

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