

Effects of Therapeutic Exercise on Quality of Life in People with Cardiovascular Disorders-An Integrative Overview of Systematic Reviews

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Abstract

This article is aimed to inform the readers on the role of exercise therapy in improving quality of life of people with cardiovascular disorders by providing an integrative overview of systematic reviews. There were two systematic reviews on stroke, three on chronic heart failure and two on intermittent claudication found in our search of PubMed database, and most of them reported improvements in physical functioning and bodily pain components of health-related quality of life (HrQoL) in people who were administered supervised aerobic exercise training. This throws light on need for future studies addressing non-operative and pre-/post-operative rehabilitation using exercise and its effect on HrQoL in this population.

Keywords: Health-Related Quality of Life; Cardiovascular Disorders; Cardiovascular Rehabilitation.

This article is aimed to inform the readers on the role of exercise therapy in improving quality of life of people with cardiovascular disorders by providing an integrative overview of systematic reviews.

Stroke

Chen and Rimmer [1] searched MEDLINE, Cumulated Index to Nursing and Allied Health Literature, EMBASE, and SportsDiscus databases and found 9 RCTs on 426 stroke survivors of which eight studies were rated as good quality. There was evidence that exercise can have a small to medium effect on HRQOL outcomes at post-intervention but not at follow-up after exercise was terminated.

Pang et al [2] searched major electronic databases to identify randomized controlled studies and found 25 trials that fulfilled the selection criteria, of which 8 were level 1 studies. "There was strong evidence that aerobic exercise (40-50% HRR progressing to 60-80%) conducted 20-40 min and 3-5 days per week was beneficial for enhancing aerobic fitness, walking speed and walking endurance in people who have had mild to moderate stroke and are deemed to have

low cardiovascular risk with exercise after proper screening assessments (grade A recommendation)."

Chronic Heart Failure

Chien et al [3] identified 10 randomised controlled trials with 648 participants of New York Heart Association Class II or III of chronic heart failure. The exercise programs ranged from 6 weeks to 9 months at low to moderate intensity (40-70% of maximum heart rate or heart rate at 70% peak VO₂). Home-based exercise increased 6-min walking distance by 41 m and peak VO₂ by 2.71 ml/kg/min more than usual activity.

Pan et al [4] searched PubMed and EMBASE databases and found four randomized controlled trials (RCTs) (n = 242) met the inclusion criteria. Tai Chi significantly improved QoL. Tai Chi was not associated with a significant reduction in N-terminal pro brain natriuretic peptide, systolic blood pressure, diastolic blood pressure, improved 6 min walking distance, or peak oxygen uptake.

Van Tol et al [5] included 35 randomised controlled trials in their meta-analysis and found beneficial effects of exercise for diastolic blood

pressure and end-diastolic volume. During maximal exercise, significant effects were found for systolic blood pressure, heart rate, cardiac output, peak oxygen uptake, anaerobic threshold and 6-min walking test.

Intermittent Claudication

Guidon and McGee [6] identified 23 studies including five randomized controlled trials in their systematic review. Eleven studies reported beneficial effects on the SF-36 Physical Functioning scale, and others reported positive effects on the scales of Bodily Pain, Role-Physical, Vitality, General Health and the Physical Component Score. Disease-specific measures demonstrated greater improvements across a range of QoL domains.

Spronk et al [7] found five studies (202 patients) in the exercise group, and three studies (470 patients), in the angioplasty group in their systematic review and found that ankle-brachial index was improved in the angioplasty group but not in the exercise group. "Quality of life in terms of physical functioning and bodily pain improved in the exercise group.

There were two systematic reviews on stroke, three on chronic heart failure and two on intermittent claudication found in our search of PubMed database, and most of them reported improvements in physical functioning and bodily pain components of health-related quality of life (HrQoL) in people who were administered supervised aerobic exercise training. This throws light on need for future studies addressing non-operative and pre-/post-operative rehabilitation using exercise and its effect on HrQoL in this population.

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