

INPLASY

Effects of different physical and mental exercises on cardiorespiratory function and quality of life in patients with heart failure: a network meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data extraction.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2024100024

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 7 October 2024 and was last updated on 7 October 2024.

INTRODUCTION

Review question / Objective Participants: patients with heart failure. Intervention: mind-body exercises (tai chi, baduanjin, yoga, etc.) Control group: conventional rehabilitation therapy, but no exercise. Outcome measures: cardiopulmonary function, quality of life. Type of study: randomised controlled trial.

Condition being studied Heart failure (HF) is a growing health problem worldwide, placing a significant burden on patients, their families and healthcare systems. The global number of people with HF has exceeded 500 million, and each year, approximately 17.9 million people die from cardiovascular disease, which is equivalent to 1 in 3 deaths.

Heart failure patients often experience symptoms such as reduced exercise tolerance and dyspnoea, resulting in a poor quality of life. However, exercise interventions can significantly improve the

prognosis of heart failure patients. According to the 2020 European Society of Cardiology (ESC) guidelines, exercise rehabilitation for heart failure patients can improve exercise tolerance and quality of life. Exercise rehabilitation not only includes aerobic exercise, but may also include resistance exercise, which aims to improve cardiac function by increasing muscle strength and endurance.

Studies have shown that exercise rehabilitation can reduce mortality and hospitalisation rates in people with heart failure, although this effect is not always significant. In addition, exercise rehabilitation can improve the health-related quality of life of people with heart failure. Cochrane systematic reviews provide evidence to support the use of alternative models of exercise rehabilitation interventions, including home-based and digitally supported intervention programmes. Mind-body exercise is an effective form of exercise for improving the health of people with heart failure, but the relative effectiveness of different mind-body exercises is still unclear.

METHODS

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Participant or population Patients with heart failure.

Intervention Mind-body exercises (tai chi, baduanjin, yoga, etc.).

Comparator Conventional rehabilitation therapy, but no exercise.

Study designs to be included Randomised controlled trial.

Eligibility criteria Age limit: 18 years and above. No restrictions based on gender or nationality. No restrictions on the language in which the article is published.

Information sources China National Knowledge Infrastructure (CNKI), Wanfang Data, VIP Database, PubMed, Web of Science, Embase, The Cochrane Library.

Main outcome(s) The main outcome measures include peak oxygen uptake, 6-minute walk test, left ventricular ejection fraction, and Minnesota Heart Failure Quality of Life score.

Quality assessment / Risk of bias analysis Revised Cochrane risk-of bias tool for randomized trials(ROB2).

Strategy of data synthesis Network meta-analysis in the framework of frequency analysis using STATA 14.0.

Subgroup analysis Subgroup analysis according to the duration of intervention.

Sensitivity analysis Network meta-regression was used to explore the potential impact of participant age and intervention duration on the results.

Language restriction No.

Country(ies) involved China.

Keywords mind-body exercises; heart failure; cardiorespiratory function; quality of life; network meta-analysis.

Contributions of each author

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