

# INPLASY

## Network meta-analysis of different physical and mental exercises on cardiorespiratory function and quality of life in patients with heart failure

INPLASY2024100027

doi: 10.37766/inplasy2024.10.0027

Received: 7 October 2024

Published: 7 October 2024

### Corresponding author:

Fengrui Shi

18339191039@163.com

### Author Affiliation:

Wuhan University of Technology.

Shi, FR; Yu, J; Wang, H.

### ADMINISTRATIVE INFORMATION

**Support** - None.

**Review Stage at time of this submission** - Data extraction.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY2024100027

**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: adults with heart failure. Intervention: mind-body exercises (including tai chi, baduanjin, yijinjing, wuqinxi, liuzi jue, etc.). Control group: conventional cardiac rehabilitation, such as drug therapy. Outcome indicators: cardiopulmonary function. Type of study: randomized controlled trial.

**Condition being studied** Heart failure (HF) is a global public health problem that places a significant burden on patients, their families and healthcare systems. According to the World Health Organization (WHO), cardiovascular diseases are the leading cause of death worldwide, with an estimated 17.9 million deaths in 2019, accounting for 32% of all global deaths. The global number of people with heart failure has exceeded 500 million, and each year about 8.9 million people die of heart failure, which is equivalent to 1 in 3 deaths.

Exercise rehabilitation for heart failure patients is a core component of cardiac rehabilitation and has been recommended in several international guidelines. Exercise rehabilitation can significantly improve the exercise tolerance and quality of life of heart failure patients, improve anxiety and depression, and reduce the mortality rate. Exercise rehabilitation includes aerobic exercise, resistance exercise, and elastic exercise, which aim to improve heart function by increasing muscle strength and endurance. Studies have shown that exercise rehabilitation can reduce the mortality and hospitalization rates of heart failure patients, although this effect is not always significant. Exercise rehabilitation can improve the heart function and physical fitness of patients with stable heart failure, as well as improving diastolic and systolic function. In addition, Mind-body exercise has shown good results in the rehabilitation of heart failure patients, but it is still unclear which mind-body exercise is most effective.

---

## METHODS

**Participant or population** Patients with heart failure over 18 years old, regardless of gender or nationality.

**Intervention** Various mind-body exercises interventions, such as tai chi, baduanjin, yoga, etc.

**Comparator** Conventional cardiac rehabilitation methods such as drug therapy and health education, but no exercise intervention.

**Study designs to be included** Randomised controlled trial.

**Eligibility criteria** Participants: adults with heart failure. Intervention: mind-body exercises (including tai chi, baduanjin, yijinjing, wuqinxi, liuzi jue, etc.) Control group: conventional cardiac rehabilitation, such as drug therapy. Outcome indicators: cardiopulmonary function. Type of study: randomized controlled trial.

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

**Main outcome(s)** Cardiopulmonary function and quality of life.

**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** Group analysis according to different intervention lengths.

**Sensitivity analysis** A network meta-regression was used to determine the potential impact of the length of the intervention and the age of the participants on the effect.

**Country(ies) involved** China.

**Keywords** Physical and mental exercise; heart failure; cardiorespiratory function; quality of life; network meta-analysis.

### Contributions of each author

Author 1 - Fengrui Shi.

Email: 18339191039@163.com

Author 2 - Jie Yu.

Email: 2041490961@qq.com

Author 3 - Hong Wang.

Email: 2004002@whsu.edu.cn