INPLASY PROTOCOL

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Review Stage at time of this submission: The review has not yet started.

Conflicts of interest: None declared.

Effects of physical activity interventions for post-COVID-19 patients: A protocol for systematic review and meta-analysis

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Review question / Objective: Coronavirus disease 2019 (COVID-19) is a novel infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which has caused a huge impact in many countries and has attracted great attention from countries around the world. However, since the outbreak of the COVID-19 pandemic, most attention has focused on containing transmission and addressing the surge of critically ill patients in acute care settings. As we enter the second phase of the pandemic, emphasis must evolve to post care of COVID-19 survivors. A variety of persistent symptoms, such as severe fatigue, shortness of breath, and attention disorder have been reported at several months after the onset of the infection. We urgently need to identify safe and effective COVID-19 rehabilitative strategies. Overwhelming evidence exists that physical activity produces short-, middle- and long-term health benefits that prevent, delay, mitigate and even reverse a large number of metabolic, pulmonary and cardiovascular diseases. The purpose of this study was to evaluate the effects of physical activity interventions for rehabilitation of post-covid-19 patient and provide a reliable method and credible evidence to improve the prognosis of post-COVID-19 patients via systematic review and meta-analysis.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 May 2022 and was last updated on 06 May 2022 (registration number INPLASY202250036).

INTRODUCTION

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COVID-19 pandemic, most attention has focused on containing transmission and addressing the surge of critically ill patients in acute care settings. As we enter the second phase of the pandemic, emphasis must evolve to post care of COVID-19 survivors. A variety of persistent symptoms, such as severe fatigue, shortness of breath, and attention disorder have been reported at several months after the onset of the infection. We urgently need to identify safe and effective COVID-19 rehabilitative strategies. Overwhelming evidence exists that physical activity produces short-, middle- and long-term health benefits that prevent, delay, mitigate and even reverse a large number of metabolic, pulmonary and cardiovascular diseases. The purpose of this study was to evaluate the effects of physical activity interventions for rehabilitation of post-covid-19 patient and provide a reliable method and credible evidence to improve the prognosis of post-COVID-19 patients via systematic review and meta-analysis.

Condition being studied: Post-coronavirus disease 2019.

METHODS

Participant or population: Post-COVID-19 patients.

Intervention: All forms of physical activity including aerobic exercise, resistance exercise, traditional Chinese exercise, etc.

Comparator: Comparisons include rest, psychosocial therapy, and drug therapy.

Study designs to be included: Including randomized controlled trials, controlled (non-randomized) clinical trials or prospective and retrospective comparative cohort studies.

Eligibility criteria: We will include research related to physical activity for post-COVID-19 patients. All the referenced documents must meet the following conditions: published documents with complete documents data; the research subject is confirmed to post-COVID-19; the

intervention group received physical activity treatment.

Information sources: The following electronic databases will be searched: PubMed, Cochrane Central Register of Controlled Trials (CENTRAL), Web of Science Core collection, and China National Knowledge Infrastructure Database (CNKI) and WanFangDatabase.

Main outcome(s): Pulmonary function and exercise capacity.

Additional outcome(s): Activities for daily living, quality of life, psychological status and cognitive functions.

Quality assessment / Risk of bias analysis: The Cochrane Collaboration's risk of bias assessment tool will be used to evaluate the methodological quality of each trial included in this review with respect to the following factors: random sequence generation and allocation concealment (selection bias); blinding of participants and personnel (performance bias); blinding of outcome assessment (detection bias); incomplete outcome data (attrition bias); selective reporting (reporting bias); and other bias. Each project will be classified as high risk, low risk or unclear risk as the result of the evaluation. Disagreements between authors will be resolved by third-party adjudication.

Strategy of data synthesis: The extracted data will be summarized using a trial description form that included trial name (author and year of publication), number and characteristics of group participants (age, sex, and severity of disease), study design, blinding, intervention schedule (type, frequency, intensity, session length, and duration of intervention), and outcome measures.

Subgroup analysis: We will conduct a subgroup analysis based on different intervention methods and outcome indicators.

Sensitivity analysis: Sensitivity analysis is to analyze the quality of research,

intervention methods, types, etc, and eliminate the researches with quality defects one by one, so that we can determine the source of heterogeneity.

Language: English.

Country(ies) involved: China.

Keywords: corona virus disease 2019, physical activity, pulmonary function, meta-analysis.

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