INPLASY PROTOCOL

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Exercise for sleep quality in older adults: a protocol for systematic review and meta-analysis

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Review question / Objective: P: Participants aged 60 years I: The elderly who take part in physical exercise; C: The elderly who do not exercise; O: Pittsburgh sleep quality index (PSQI); S: Randomized controlled trials.

Condition being studied: Sleep is the basic life process to maintain human health and emotional and cognitive stability. Nocturnal sleep affects daytime emotions, emotional responses, and the ability to regulate positive and negative emotions. Conversely, daytime experiences affect sleep. Tens of thousands of people around the world suffer from sleep disorders or lack of sleep every day. Sleep disorders are more common in older people, and it is estimated that nearly 50% of the elderly have sleep problems. There is growing evidence that poor sleep quality and short sleep time are potential risk factors for the occurrence and development of various mental and cognitive disorders, such as anxiety, dementia, cognitive impairment, physical dysfunction and so on. As a low-cost alternative to disease treatment and prevention, exercise has been shown to improve the mood and activity of central nervous system. However, due to the changes in the living environment of the elderly and the fact that they usually have more underlying diseases and disability burdens. A various of exercise should be explored to achieve a better protective effect. To our knowledge, there is no systematic review and meta-analysis to compare the role of different exercise patterns in improving sleep quality in older people.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 November 2020 and was last updated on 09 November 2020 (registration number INPLASY2020110032).

INTRODUCTION

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METHODS

Participant or population: Participants aged 60 years.

Intervention: The elderly who take part in physical exercise.

Comparator: The elderly who do not exercise.

Study designs to be included: Randomized controlled trials.

Eligibility criteria: 1) cognitive impairment. 2) mental illness. 3) cannot walk 10 meters without help. 4) suffering from progressive neurological diseases (such as Parkinson's disease). 5) self-reported physical condition that is unable to exercise (such as unstable heart disease). 6) acute epidemic disease.

Information sources: PUBMED, EMBASE, CENTAL, LILACS, Clinical Trials databases, Web of Science and CINAHL (Cumulative Index to Nursing and Allied Health Literature). This study regardless of the language and references of all the selected studies were checked as well as the gray literature.

Main outcome(s): Pittsburgh sleep quality index (PSQI).

Quality assessment / Risk of bias analysis: The Cochrane Collaboration's risk of bias tool will be used for RCT studies by two reviewers. The criteria included six items on sequence generation, allocation concealment, blinding, incomplete data outcomes, selective outcome reporting, and other biases. Agreement was resolved by consensus meeting between the two reviewers. If disagreement persisted after consensus meeting, a third reviewer made the final decision.

Strategy of data synthesis: (1) Statistical heterogeneity: The chi-square and I2 tests be used Given I2 0.1, a fixed effect model would be applied. On the other hand, the random effect model would be used if articles were considered clinically similar enough. Otherwise, they would be synthesized with descriptive analysis instead of meta-analysis. (2) Meta-analysis: The standardized mean difference (SMD) and a 95% confidence interval (95% CI) of the post-intervention score were calculated by RevMan 5.3.5.

Subgroup analysis: We will conduct subgroup studies based on gender and basic diseases (such as hypertension and diabetes).

Sensibility analysis: If necessary, an analysis of the sensitivity.

Country(ies) involved: China.

Keywords: elderly, meta-analysis, sleep quality; exercise.

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