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Meta-analysis of the improvement effect of multi-domain intervention on frailty

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ADMINISTRATIVE INFORMATION

Support - Major Project of Fujian Provincial Health Commission (2022ZD01006).

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

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 March 2024 and was last updated on 09 March 2024.

INTRODUCTION

Review question / Objective Population (P): Frail and pre-frail older adults. Intervention (I): Multi-domain intervention, including two or more intervention forms such as exercise, diet, cognitive training, social support, depression management, stress management, medication management, etc. Control (C): Health education or standard care. Outcome (O): Reporting frailty scores as the primary outcomes. Study design (S): Randomized controlled trial.

Condition being studied Frailty is an age-related geriatric syndrome characterized by the decline in the functioning of multiple physiological systems and reduced stress resistance. Frail older adults are prone to experiencing functional impairments, multimorbidity, and increased mortality rates, among other adverse health outcomes. Interventions targeting frailty may help delay aging and improve the health status of older adults. Therefore, we use frailty as the primary outcome, exploring beneficial health interventions for the elderly population.

In recent years, there has been an increase in literature on multi-domain interventions, particularly in the cognitive domain. It has been shown that multi-domain interventions can effectively improve cognitive function in older adults with cognitive impairments. Subsequently, the approach of multi-domain interventions has gradually been extended to intervention studies targeting frailty and other physical impairments in older adults. Currently, there is no literature that specifically focuses on a systematic review and meta-analysis of the impact of multi-domain interventions involving two or more domains on frailty.

METHODS

Participant or population Frail and pre-frail older adults.

Intervention Multi-domain intervention, including two or more intervention forms such as exercise, diet, cognitive training, social support, depression management, stress management, medication management, etc.

Comparator Health education or standard care.

Study designs to be included Randomized controlled trial.

Eligibility criteria (1) Animal experiments (2) Study protocols, systematic reviews or meta-analyses, case reports, editorial comments, and conference abstracts (3) Unavailable or insufficient data (4) Duplicate publications or papers from the same study.

Information sources PubMed, Embase, The Cochrane Library, Web of Science.

Main outcome(s) Frailty score defined by Fried phenotype, Frail scale, or frailty index.

Quality assessment / Risk of bias analysis This study utilized the Cochrane Risk of Bias assessment tool.

Strategy of data synthesis For continuous variables, the extracted data included the number of individuals in the intervention and control groups, as well as the mean and standard deviation. The effect sizes for outcome measures using the same measurement method were combined using the weighted mean difference (WMD) and presented with a 95% confidence interval (CI).

Subgroup analysis We perform the subgroup analysis based on different follow-up months.

Sensitivity analysis Sensitivity analysis involves systematically excluding individual studies to assess the stability of the overall effect size.

Country(ies) involved China - Fujian Provincial Hospital Geriatric Department 134 Dongjie St, Gulou District Fuzhou, 350001.

Keywords Frailty; multi-domain intervention; randomized controlled trial.

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