INPLASY

Effect of Resistance Exercise on Body Composition and Functional Capacity in Older Women with Sarcopenic Obesity— a systematic review and meta-analysis of randomized controlled trials

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ADMINISTRATIVE INFORMATION

Review Stage at time of this submission - Risk of bias assessment.

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 15 March 2024 and was last updated on 15 March 2024.

INTRODUCTION

*R*eview question / Objective Sarcopenic obesity (SO) is a geriatric syndrome in which sarcopenia and obesity coexist as a clinical state. The discovery of the effects of exercise on the body has opened new avenues of research into the role of resistance exercise as a potential treatment modality. Potential treatments have received considerable attention in recent years.This meta-analysis included only randomized controlled trials to explore the effects of resistance exercise on body composition and fitness in older women with sarcopenic obesity.
P:older women with sarcopenic obesity.
I:Resistance Exercise
C:Non Resistance Exercise
O: ①BF% ②TSM ③BMI ④BMD ⑤TUG ⑥10MWT
⑦TCR
S:RCT.

Condition being studied Global sarcopenia research has shown significant growth over the past two decades,from 2001 to 2020, with a notable rise in recent years . Estimations of sarcopenia prevalence range from 9.9% to 40.4% among different populations.Sarcopenic obesity (SO) is defined as reduced lean body mass in excess adiposity.Consequently, it is suggested that SO is predicted to increase as the incidence of obesity rises over time. Resistance exercise shows effectiveness in decreasing multiple risk factors associated with sarcopenic obesity (SO) by increasing muscle strength and growth and enhancing muscle function, in addition to reducing body fat percentage.

METHODS

Participant or population Older women with sarcopenic obesity.

Intervention Resistance Exercise.

Comparator Non Resistance Exercise.

Study designs to be included RCT.

Eligibility criteria Inclusion criteria Articles that met the following criteria were included:(1)The study design was a randomized controlled trial（randomized controlled trials,RCT）;(2)The study population was elderly sarcopenic obese women; (3)Language:English;(4)Age: ≥60 years old;(5)The intervention was resistance exercise, including but not limited to muscle training, progressive strength and/or resistance training, weight training and/or elastic band training, and the control group was non-exercise therapy or telephone follow-up, etc. ...;(6)Outcome indicators include one of the following: BF%, BMD, TSM, BMI, TUG, 10MWT, TCR.;Exclusion criteria(1)Other types of experiments, case reports, systematic reviews, and reviews;(2)Combined two or more interventions other than resistance exercise;(3)Patients with severe other complications such as cancer, multiple sclerosis, strokes, cognitive impairment were also excluded from this study;(4)The data could not be extracted, and the outcome indicators did not match.

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

Main outcome(s) ①BF%②TSM③BMI ④BMD ⑤TUG ⑥10MWT ⑦TCR.

Quality assessment / Risk of bias analysis Chchrane tool.

Strategy of data synthesis Continuous variables were expressed as mean, standard deviation or difference of means, and 95% CI, and statistical heterogeneity among studies was assessed using the Q test combined with the I 2 test; I 2 >50% and P < 0.1 indicated that there was statistical heterogeneity among studies, which was analyzed using a random-effects model; I 2 ≤50% and P ≥ 0.1 indicated that there was no statistical heterogeneity among studies, which was analyzed using a fixed-effects model.

Subgroup analysis A subgroup study was conducted according to the age and training volume of the patients.

Sensitivity analysis After deleting any one of the articles, the merged results of the other articles are not much different from those without deletion, which means that the sensitivity analysis has been passed.

Country(ies) involved China.

Keywords Resistance Exercise, Sarcopenic Obesity, Older, Body Composition, Functional Capacity.

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