

Effects of Blood Flow Restriction Training on physical performance among the elderly: a systematic review

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ADMINISTRATIVE INFORMATION**Support** - None.**Review Stage at time of this submission** - Completed but not published.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202470047**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 12 July 2024 and was last updated on 12 July 2024.**INTRODUCTION**

Review question / Objective The purpose of this systematic review is to analysis effect of Blood Flow Restriction Training on physical performance among the elderly and identify the gaps for this field.

Condition being studied The world's population is aging more and more seriously. WHO predicts that by 2050, the population over 60 years old will reach 2.1 billion, accounting for 22%. The increase in the elderly population will bring many challenges to the country and society. As age increases, a person's physical condition will gradually decline, especially after the age of 60, which is manifested by a gradual decline in cognitive function, skeletal muscle function, balance function, physical stability and other aspects of function, further affecting physical performance. , increasing the risk of fractures, disability, bed rest, and death. Therefore, finding a way to help the elderly improve their physical performance is important.

METHODS

Participant or population Health elderly without illness.

Intervention Any types of blood flow restriction training.

Comparator As for experiment group, the blood flow restriction training should be applied. As for control group, routine training or other training could be applied.

Study designs to be included RCT.

Eligibility criteria As for population: healthy elderly without illness; as for intervention: the study must involve blood flow restriction training; as for outcome: study should report as least one result related to physical performance; as for study design, the study must be RCT.

Information sources Prominent academic databases were considered to search the related

literature, including Ebscohost, Scopus, PubMed, Web of Science. Meanwhile,, the search was also thoroughly carried out on Google Scholar and references, until the May 2024. For each independent database, a strategic search query was conducted by the title and abstract.

Main outcome(s) The blood flow restriction training could improve physical performance in terms of aerobic performance, strength and physical functional performance.

Quality assessment / Risk of bias analysis The quality assessment for each study based on the PEDro scale. Nine studies scored between 4 and 7 on the PEDro scale, with one study scoring 10. Four studies provided detailed descriptions of participant sources and inclusion criteria. Seven studies explicitly used random methods for participant allocation, while two studies mentioned the use of allocation concealment. Nine studies incurred deductions due to criteria related to blinding of participants, assessors, and therapists. Two studies explicitly mentioned the number of participants assessed post-trial. All studies scored on all other items of the PEDro scale.

Strategy of data synthesis None.

Subgroup analysis None.

Sensitivity analysis None.

Country(ies) involved China and Malaysia.

Keywords Blood Flow Restriction Training; Physical performance; The elderly.

Contributions of each author

Author 1 - Shengyao Luo.