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Meta-analysis of the efficacy of Schroth 3D exercise on quality of life and cardiopulmonary function in adolescent idiopathic scoliosis

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ADMINISTRATIVE INFORMATION

Support - key R & D Program of Zhejiang(2023C03003).

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2023120006

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 01 December 2023 and was last updated on 01 December 2023.

INTRODUCTION

Review question / Objective The aim of this meta-analysis of randomized controlled trial is to evaluate the effect of 3D Schroth exercise for adolescents idiopathic scoliosis.

Condition being studied Idiopathic scoliosis is a three-dimensional deformity of the spine initially proposed by Kleinberg. This condition is multifactorial in nature, with its exact cause currently unknown, possibly stemming from a combination of environmental and genetic factors. The Scoliosis Research Society (SRS) recommends a diagnostic approach based on the coronal curvature angle of the spine, known as the Cobb angle.

METHODS

Search strategy We will search PubMed, Embase, Cochrane Library, Web of Science, CNKI and Wanfang Database . All the publications untill July 2023 will be searched. the search string will be built as follows: schroth AND (scoliosis OR scoliosis OR spine malformation OR adolescent idiopathic scoliosis).
#1 schroth
#2 scoliosis or scoliosis or spine malformation or adolescent idiopathic scoliosis
#3 #1 AND #2
中文检索式：
#1 schroth+施罗斯+施罗特
#2脊柱侧弯＋脊柱侧凸＋AIS
#3 #1 AND #2.

Participant or population Adolescent idiopathic scoliosis, cobb>10°.

Intervention Schroth exercise.

Comparator conventional therapy(balance training, core training, home training, no intervention).

Study designs to be included Randomized control test will be included.

Eligibility criteria Age20y.

Information sources Electronic databases, grey literature.

Main outcome(s) Cobb angle, angle of trunk rotation, scoliosis Research Society-22, FVC, WRVAS, trunk extension strength.

Quality assessment / Risk of bias analysis two reviewers will independently assesses the quality of the selected studies according to the cochrane collaboration's tool for randomized controlled trials. Items will be evaluated in three categories: Low risk of bias, unclear bias and high risk of bias. The following characteristics will be evaluated: Random sequence generation(selection bias), allocation concealment(selection bias), blinding of participant and personnel(performance bias), incomplete outcome data(attrition bias), selective reporting(reporting bias), other biases, result from these questions will be graphed and assessed using Review Manager 5.3.

Strategy of data synthesis None reported.

Subgroup analysis We will consider subgroups such as intervention type, intervention duration.

Sensitivity analysis The sensitivity analysis was conducted using a stepwise exclusion method. Each time, one publication was systematically removed, and the remaining studies (n-1 papers) were subjected to meta-analysis consolidation. By observing the changes in the pooled results, an assessment was made to determine whether the original meta-analysis findings were significantly influenced by specific studies.

Language restriction English and chinese.

Country(ies) involved China (Children's Hospital, Zhejiang University School of Medicine).

Keywords scoliosis, schroth exercise, meta-analysis, quality of life, cardiopulmonary function.

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