Clinical Trial Protocol
Iranian Registry of Clinical Trials

17 Jun 2026

The effect of Schroth method as a physiotherapy scoliosis-specific exrecise in postural control of individual with adolescent idiopathic scoliosis: a single blinded randomized clinical trial

Protocol summary

Study aim
The effect of Schroth method in postural control of individual with adolescent idiopathic scoliosis

Design
Randomized, superiority, two parallel group trial with blinded outcome assessment. Random size 4 blocked randomization stratified will use for the Schroth curve types and concealed randomization sequence carried out at an external site.

Settings and conduct
The assessment of patients' postural control in static stand position will perform in a laboratory of department of physical therapy in school of rehabilitation sciences of Iran University of Medical Sciences approved for biomedical research using a force plate. Patients will instruct to step onto the force plate and stand quietly with the feet shoulder width apart, hands at the side and look straight ahead at a white dot located at eye level 1.2 meters away. Trial will collect for 90 s in eyes open (EO) then in eyes closed (EC) conditions and will calculate the Romberg's quotients (RQ: EC/EO).

Participants/Inclusion and exclusion criteria
Inclusion criteria: age range of 10-19 years, both genders, curves between 10-45, the primary curvatures in right and located in the thoracic spine. Exclusion criteria: accompanying mental problems or neurological-muscular or rheumatic diseases, a previous spinal operation, scheduled for surgery.

Intervention groups
Schroth exercises for intervention group include: muscle cylinder, the frog at the pond, the door handle, raising the pelvis and 50x exercise will perform in one-hour sessions, combined with a 30±45 min daily home exercises program. Also standard care for intervention and control groups including observation after each 3 month for patients have curves 10-25 and brace daily (16h) for patients have curves 25-45 according to their curves.

Main outcome variables
The primary outcome consists of center of pressure's sway and position variables for assessment of postural control.

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20180728040618N3**
Registration date: **2019-12-27, 1398/10/06**
Registration timing: **registered_while_recruiting**

Last update: **2019-12-27, 1398/10/06**
Update count: **0**

Registration date
2019-12-27, 1398/10/06

Registrant information

Name
Holakoo Mohsenifar

Name of organization / entity

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Iran (Islamic Republic of)

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2019-12-22, 1398/10/01

Expected recruitment end date
2020-12-21, 1399/10/01

Actual recruitment start date
empty
Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of Schroth method as a physiotherapy scoliosis-specific exrecise in postural control of individual with adolescent idiopathic scoliosis: a single blinded randomized clinical trial

Public title
The effect of Schroth method in postural control of scoliosis
Purpose
Treatment
Inclusion/Exclusion criteria
Inclusion criteria:
Having a diagnosis of adolescent idiopathic scoliosis Age range of 10-19 years Both genders Curves between 10-45 The primary curvatures in right and located in the thoracic spine Risser grade 0 to 5 No other treatment during this trial which might affect scoliosis The ability to attend weekly visits The ability for reading Persian version of questionnaire
Exclusion criteria:
Having contraindications to exercise Accompanying mental problems Accompanying neurological-muscular or rheumatic diseases A previous spinal operation Scheduled for surgery Non-idiopathic scoliosis
Age
From **10 years** old to **19 years** old
Gender
Both

Phase
3
Groups that have been masked

- Investigator

Sample size
Target sample size: **15**
Randomization (investigator's opinion)
Randomized
Randomization description
Method of randomization is 4 block, unit of randomization is individual, randomization strata according to number of curves is startified randomization, then patients will divide in intervention group (group A) and control group (group B) and two list of random allocation that consist of A and B letters will locate in sealed envelops. Each numbered envelope will be according to patient's number.
Blinding (investigator's opinion)
Single blinded
Blinding description
This trial is a single blinded randomized clinical trial. A physical therapist as an assessor that will assess postural control, SRS-22r questionnaire and angle of trunk rotation is blind.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Iran University of Medical Sciences
Street address
Iran University of Medical Sciences, Shahid Hemmat Highway, Tehran
City
Tehran
Province
Tehran
Postal code
1449614535
Approval date
2019-11-04, 1398/08/13
Ethics committee reference number
IR.IUMS.REC.1398.804

Health conditions studied

1

Description of health condition studied
Adolescent idiopathic scoliosis
ICD-10 code
M41.2
ICD-10 code description
Other idiopathic scoliosis

Primary outcomes

1

Description
postural control
Timepoint
before intervention and 3 month after intervention
Method of measurement
force plate

Secondary outcomes

1

Description
Cobb angle
Timepoint
before intervention and 6 month after intervention

Method of measurement
standing posterior-anterior radiographs

2

Description
angle of trunk rotation
Timepoint
before intervention and 3 and 6 month after intervention
Method of measurement
scoliometer

3

Description
Quality of life
Timepoint
before intervention and 3 and 6 month after intervention
Method of measurement
Scoliosis Research Society 22r questionnaire

4

Description
function
Timepoint
before intervention and 3 and 6 month after intervention
Method of measurement
function item in Scoliosis Research Society 22r questionnaire

5

Description
pain
Timepoint
before intervention and 3 and 6 month after intervention
Method of measurement
pain item in Scoliosis Research Society 22r questionnaire

6

Description
self image
Timepoint
before intervention and 3 and 6 month after intervention
Method of measurement
self image item in Scoliosis Research Society 22r questionnaire

Intervention groups

1

Description
Intervention group: The six-month supervised Schroth physiotherapy scoliosis-specific exercise intervention included five one-hour long private sessions delivered during the first two weeks, followed by weekly one-hour long group classes combined with a 30±45 min daily home exercise program. Also standard care including observation after each 3 month for patients have curves 10-25 and brace daily (16h) for patients have curves 25-45 according to their curves.
Category
Rehabilitation

2

Description
Control group: Standard care including observation after each 3 month for patients have curves 10-25 and brace daily (16h) for patients have curves 25-45 according to their curves.
Category
Rehabilitation

Recruitment centers

1

Recruitment center
Name of recruitment center
School of Rehabilitation Sciences of Iran University of Medical Sciences
Full name of responsible person
Holakoo Mohsenifar
Street address
School of Rehabilitation Sciences of Iran University of Medical Sciences, Madadkaran St, Shah Nazari St, Madar Sq, Mirdamad Blvd, Tehran
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
No
Title of funding source
Iran University of Medical Sciences
Proportion provided by this source
100
Public or private sector
Public
Domestic or foreign origin
Domestic
Category of foreign source of funding
empty
Country of origin
Type of organization providing the funding
Academic

Person responsible for general inquiries

Contact
Name of organization / entity
Iran University of Medical Sciences
Full name of responsible person
Holakoo Mohsenifar
Position
Assistant Professor
Latest degree
Ph.D.
Other areas of specialty/work
Physiotherapy
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Yes - There is a plan to make this available
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Yes - There is a plan to make this available
Title and more details about the data/document
Deidentified individual participant data collected for the primary and secondary outcome measures will be shared if necessary.

When the data will become available and for how long

Starting 6 months after publication

To whom data/document is available

The data will be available for physical therapists working in academic institutions and also clinicians working in the field of musculoskeletal disorders

Under which criteria data/document could be used

The raw data and results of this study can be used in future relevant systematic reviews. Thus, the raw data and results of this study will be available for researchers working in the field of scoliosis.

From where data/document is obtainable

Applicants can contact the researcher of this study Yasin Larni by email. Email address: yasin.larni_pt@yahoo.com

What processes are involved for a request to access data/document

Applicants should explain in detail about their project and how the data/documents of this study will be used in their project. Then, the data/documents files will be sent by email to applicants on request. This process may takes 10-12 working days.

Comments