Clinical Trial Protocol
Iranian Registry of Clinical Trials

10 Jun 2026

Effectiveness of corrective exercise with and without the Alexander technique on forward head, round shoulder and function in violin players: a randomized control trial

Protocol summary

Study aim

Examining the Effects of Corrective Exercises With and Without the Alexander Technique on Forward Head Posture, Rounded Shoulders, and Functional Performance in Violinists

Design

A three-arm parallel RCT

Settings and conduct

This study will be conducted in the field of sports sciences in Gilan, where participants will be randomly assigned to one of three groups: corrective exercises, corrective exercises combined with the Alexander Technique, or a control group. Outcome assessments will be performed at two time points: baseline and immediately after the eight-week intervention period, using the DASH questionnaire and two-dimensional postural angle measurements (forward head and rounded shoulder) obtained through digital photography and Kinovea software.

Participants/Inclusion and exclusion criteria

FHA greater than 46° and rounded shoulder angle greater than 52° At least three years of playing experience No concurrent use of other corrective or therapeutic interventions Not engaged in occupations involving prolonged postures or repetitive movements No history of fractures, surgery, or joint disorders affecting the spine or shoulder girdle No structural or functional shortening greater than 2 cm in either upper limb No participation in regular exercise programs

Intervention groups

Three groups will participate: the corrective exercise group; the corrective exercise plus Alexander Technique group; and the control group. All participants will complete a standardized pre-test session including the DASH questionnaire, lateral digital photography, and Kinovea angle analysis.

Main outcome variables

Forward head posture angle Rounded shoulder posture angle Upper-extremity function assessed by the Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire.

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20260421069127N1**
Registration date: **2026-04-30, 1405/02/10**
Registration timing: **retrospective**

Last update: **2026-04-30, 1405/02/10**
Update count: **0**

Registration date

2026-04-30, 1405/02/10

Registrant information

Name

Faeze Mehdipour

Name of organization / entity

Urmia university

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-04-28, 1405/02/08

Expected recruitment end date

2026-04-28, 1405/02/08

Actual recruitment start date
2026-04-28, 1405/02/08
Actual recruitment end date
2026-04-30, 1405/02/10
Trial completion date
2026-06-29, 1405/04/08

Scientific title
Effectiveness of corrective exercise with and without the Alexander technique on forward head, round shoulder and function in violin players: a randomized control trial

Public title
Effectiveness of corrective exercise with and without the Alexander technique on forward head, round shoulder and function in violin players
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
Forward head angle greater than 46° and rounded shoulder angle greater than 52° At least three years of playing experience No concurrent use of other corrective or therapeutic interventions Not engaged in occupations involving prolonged postures or repetitive movements No history of fractures, surgery, or joint disorders affecting the spine or shoulder girdle No structural or functional shortening greater than 2 cm in either upper limb No participation in regular exercise programs
Exclusion criteria:
Failure to complete the training program in accordance with the study objectives or unwillingness of the participant to continue the program Observation of any pathological symptoms during the training sessions Absence from more than three training sessions
Age
From **18 years** old to **35 years** old
Gender
Both

Phase
N/A
Groups that have been masked

- Participant

Sample size
Target sample size: **66**
Actual sample size reached: **57**
Randomization (investigator's opinion)
Randomized
Randomization description
A total of 66 eligible violinists participated in the study. Participants were allocated to the study groups using a computer-based randomization procedure. A random sequence generator available at https://www.randomizer.org was used to generate the allocation sequence, according to which participants were randomly assigned to one of three groups: a corrective exercise group, a corrective exercise plus Alexander Technique group, and a control group. The randomization list was stored on a password-protected computer and was accessible only to the researcher responsible for participant allocation. Recruitment personnel and others involved in the enrollment process did not have access to this information.
Blinding (investigator's opinion)
Single blinded
Blinding description
Single-blind design Participants: blinded to group allocation
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Research Ethics Committees of Sport Sciences Research Institute (SSRI)
Street address
Tehran Province, Tehran, District 7, 5th Dead End
City
Tehran
Province
Tehran
Postal code
1587958711
Approval date
2026-04-20, 1405/01/31
Ethics committee reference number
IR.SSRC.REC.1405.004

Health conditions studied

1

Description of health condition studied
Forward head posture (forward head angle abnormality)
ICD-10 code
M40.0
ICD-10 code description
Postural kyphosis

Primary outcomes

1

Description
The primary outcome in this record is the forward head angle. This variable represents the alignment of the head in the sagittal plane and indicates the degree of anterior displacement of the head relative to the trunk. It is selected as a primary outcome to evaluate the postural alignment of violin players and to determine whether the eight-week intervention leads to measurable changes in head posture.

Timepoint

The forward head angle will be measured at two time points: at baseline before the beginning of the intervention, and after completion of the eight-week intervention period.

Method of measurement

The forward head angle will be measured using digital photogrammetry in the sagittal plane. Standardized lateral photographs will be obtained from each participant, and the images will be analyzed using Kinovea motion analysis software to calculate the two-dimensional forward head angle.

2

Description

The primary outcome in this record is the rounded shoulder angle. This variable reflects the anterior displacement and protraction of the shoulder girdle in the sagittal plane. It has been selected as a primary outcome to evaluate postural alignment of the shoulder girdle in violin players and to determine whether the eight-week intervention leads to improvement in shoulder posture.

Timepoint

The rounded shoulder angle will be measured at two time points: at baseline before the beginning of the intervention, and after completion of the eight-week intervention period.

Method of measurement

The rounded shoulder angle will be measured using digital photogrammetry in the sagittal plane. Standardized lateral photographs will be taken from each participant, and the images will be analyzed using Kinovea motion analysis software to calculate the two-dimensional rounded shoulder angle.

3

Description

The primary outcome in this record is upper extremity function. This variable reflects the functional status of the arm, shoulder, and hand during daily and instrumental activities. It has been selected as a primary outcome to evaluate whether the eight-week intervention leads to improvements in upper limb functional capacity in violin players.

Timepoint

Upper extremity function will be evaluated at two time points: at baseline before the beginning of the intervention, and after completion of the eight-week intervention period.

Method of measurement

Upper extremity function will be assessed using the full Persian version of the Disabilities of the Arm, Shoulder and Hand questionnaire. This validated questionnaire will be completed by participants to determine their level of functional limitation in the upper limb.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Participants assigned to the Corrective Exercise Group will perform an 8-week corrective exercise program designed to address forward head posture and rounded shoulder posture. Each training session will last approximately 60 minutes and will include 5–10 minutes of general warm-up, 20–40 minutes of corrective stretching and strengthening exercises targeting cervical, thoracic, and scapular muscles, and 5–10 minutes of cool-down.The program will be performed three times per week throughout the 8-week period.The progressive protocol consists of a series of ten corrective exercises, including deep cervical flexor activation, pectoralis minor stretching, scapular retraction strengthening, thoracic extension mobility, and shoulder girdle stabilization tasks. Exercise sets and repetitions are adjusted based on weekly progression while ensuring proper technique and postural alignment under researcher supervision.

Category

Rehabilitation

2

Description

Intervention group: Participants assigned to this group will receive both the corrective exercise program and the Alexander Technique instructional protocol.Each training session will last 60 minutes and will be structured as follows:5–10 minutes of general warm-up5–10 minutes of Alexander Technique instruction focusing on inhibition, primary control (head–neck–spine coordination), and conscious direction of movements, based on a 19-item standardized protocol20–40 minutes of corrective stretching and strengthening exercises (identical to those in the corrective exercise group)5–10 minutes of cool-downThe intervention will be performed three times per week for 8 weeks. Throughout the Alexander Technique component, participants are guided to maintain optimal head–neck alignment, reduce unnecessary muscular tension, and perform movements with improved postural awareness.

Category

Rehabilitation

3

Description

Control group: Participants in the control group will not receive any structured training or therapeutic intervention during the 8-week study period. They will be instructed to continue their routine daily activities without initiating new exercise programs.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center
Faculty of Physical Education and Sports Sciences, University of Guilan

Full name of responsible person
Faeze Mehdipour

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Sponsors / Funding sources

1

Sponsor

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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
Urmia University

Proportion provided by this source
1

Public or private sector
Private

Domestic or foreign origin
Domestic

Category of foreign source of funding
empty

Country of origin

Type of organization providing the funding
Persons

Person responsible for general inquiries

Contact

Name of organization / entity
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Full name of responsible person
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Position
Associate professor

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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
Undecided - It is not yet known if there will be 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
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Not applicable
Title and more details about the data/document
Some of the images used in the study will be corrupted.
When the data will become available and for how long
from 29/06/2026 to 6 months later
To whom data/document is available
Researcher
Under which criteria data/document could be used
An official email should be used to contact the corresponding author
From where data/document is obtainable
corresponding author
What processes are involved for a request to access data/document
official email
Comments