

Clinical Trial Protocol

Iranian Registry of Clinical Trials

04 Aug 2026

Studying the effect of exercise therapy based on virtual reality on photogrammetric data, pain, disability, neck range of motion and balance in young subjects with forward head posture.

Protocol summary

Study aim

Studying the effect of exercise therapy based on virtual reality on photogrammetric data, pain, disability, neck range of motion and balance in young subjects with forward head posture.

Design

Randomized controlled trial with control group, with parallel groups, one blind, randomized by coin toss, on 50 patients.

Settings and conduct

In this study, 50 male and female students from the Faculty of Rehabilitation who live in dormitories affiliated to Shahid Beheshti University of Medical Sciences and refer to the physiotherapy clinic of the Faculty of Rehabilitation of Shahid Beheshti University of Medical Sciences will participate. Then, after a brief explanation about the study, people are randomly divided into two virtual reality groups (25 people) and a control group (25 people).

Participants/Inclusion and exclusion criteria

Inclusion criteria: Age between 18-29 years
Craniovertebral angle less than 48 degrees
Absence of neck pain due to a specific cause such as trauma, whiplash injury, malignant problems. Absence of forward head posture related to structural disorders of osteoporosis or pregnancy. No history of radiculopathy and myopathy diagnosis. No history of inflammatory diseases, spinal tumor and spinal inflammation
No history of surgery and neck and spine fracture. No vision problems. No history of physiotherapy treatment in the last month. Exclusion criteria: Dizziness during virtual reality games. Dropout for any reason.

Intervention groups

People in the virtual reality group practice chin tuck in the form of a game with virtual reality glasses. And in the control group, people are taught the chin tuck exercise and should do it at home.

Main outcome variables

Pain, craniovertebral angle, neck range of motion, static and dynamic balance, neck disability index

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20231010059686N1**

Registration date: **2023-10-24, 1402/08/02**

Registration timing: **prospective**

Last update: **2023-10-24, 1402/08/02**

Update count: **0**

Registration date

2023-10-24, 1402/08/02

Registrant information

Name

yasaman makoolati

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 919 453 8190

Email address

y.makoolati@sbmu.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2023-10-27, 1402/08/05

Expected recruitment end date

2023-12-20, 1402/09/29

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Studying the effect of exercise therapy based on virtual reality on photogrammetric data, pain, disability, neck range of motion and balance in young subjects with forward head posture.

Public title

Studying the effect of exercise therapy based on virtual reality on photogrammetric data, pain, disability, neck range of motion and balance in young subjects with forward head posture.

Purpose

Treatment

Inclusion/Exclusion criteria**Inclusion criteria:**

Craniovertebral angle less than 48 degrees Absence of neck pain with a specific cause such as trauma, whiplash injury, malignant problems Absence of forward head posture related to structural disorders of osteoporosis or pregnancy No history of radiculopathy and myopathy diagnosis. No history of inflammatory diseases, spinal tumor and spinal inflammation No history of surgery and neck and spine fracture Absence of visual problems No history of physiotherapy treatment in the last month

Exclusion criteria:

Dizziness during virtual reality games

Age

From **18 years** old to **29 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Participant

Sample size

Target sample size: **50**

Randomization (investigator's opinion)

Randomized

Randomization description

Randomization by simple randomization method and coin toss tool

Blinding (investigator's opinion)

Single blinded

Blinding description

Blinding of participants to treatment groups.

Placebo

Not used

Assignment

Parallel

Other design features**Secondary Ids**

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics Committee of Shahid Beheshti University of Medical Sciences

Street address

NO.332, Velayat Town, Shahid Babaei highway

City

Tehran

Province

Tehran

Postal code

1698749511

Approval date

2023-10-01, 1402/07/09

Ethics committee reference number

IR.SBMU.RETECH.REC.1402.331

Health conditions studied**1****Description of health condition studied**

Forward head posture

ICD-10 code**ICD-10 code description****Primary outcomes****1****Description**

Craniovertebral angle

Timepoint

Before and after the intervention

Method of measurement

Photogrammetry

Secondary outcomes**1****Description**

Pain

Timepoint

Before and after the intervention

Method of measurement

Numerical Rating

2**Description**

Static balance

Timepoint

Before and after the intervention

Method of measurement

Unipedal Stance Test

3

Description

Dynamic balance

Timepoint

Before and after the intervention

Method of measurement

Star excursion balance test

4

Description

Neck disability index

Timepoint

Before and after the intervention

Method of measurement

Questionnaire

Intervention groups

1

Description

Intervention group: Virtual reality group

Category

Rehabilitation

2

Description

Control group: Exercise group

Category

Rehabilitation

Recruitment centers

1

Recruitment center**Name of recruitment center**

Shahid Beheshti Rehabilitation Faculty

Full name of responsible person

Minu Khalkhali

Street address

Damavand St

City

Tehran

Province

Tehran

Postal code

1616913111

Phone

+98 21 7756 1721

Email

info@sbmu.ac.ir

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Frnaz Fathollahzadeh

Street address

Damavand St

City

Tehran

Province

Tehran

Postal code

616913111

Phone

+98 21 7756 1721

Email

info@sbmu.ac.ir

Grant name**Grant code / Reference number****Is the source of funding the same sponsor organization/entity?**

Yes

Title of funding source

Shahid Beheshti 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**

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Yasaman Makoolati

Position

Student

Latest degree

Bachelor

Other areas of specialty/work

Physiotherapy

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No.332, Velayat minicity, Shahid babaeei Blv

City

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Province

Tehran

Postal code

1698749511

Phone

+98 919 453 8190

Fax**Email**

y.makoolati@sbmu.ac.ir

Person responsible for scientific inquiries

Contact

Name of organization / entity

Shahid Beheshti University of Medical Sciences

Full name of responsible person

Yasaman Makoolati

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Sharing plan

Deidentified Individual Participant Data Set (IPD)

No - There is not a plan to make this available

Justification/reason for indecision/not sharing IPD

There is no further information

Study Protocol

No - There is not a plan to make this available

Statistical Analysis Plan

No - There is not a plan to make this available

Informed Consent Form

No - There is not a plan to make this available

Clinical Study Report

No - There is not a plan to make this available

Analytic Code

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available