

Clinical Trial Protocol

Iranian Registry of Clinical Trials

10 Jun 2026

A comparison between McKenzie exercise and kinesio taping effect on electrophysiological parameters of cervical muscle performance in smartphone users

Protocol summary

Study aim

Investigating and comparing McKenzie exercise and kinesio taping effect on performance of upper Trapezius, Sternocleidomastoid and cervical erector spinae muscles while using smartphone

Design

A randomised, crossover, controlled clinical trial with blinded data analyser. Randomisation for sequences of allocating the participants to different groups will be done by <https://statpages.info/latinsq.html> website

Settings and conduct

The study will be done in biomechanics laboratory of rehabilitation school of Tehran university of medical sciences. Discomfort and disability will be measured by Numeric Rating Scale and Neck Disability index questionnaires. Muscles activity will be measured by surface electromyography. It is a crossover study and data analyser will be blinded; because data will be coded so that the allocation of data will be unknown.

Participants/Inclusion and exclusion criteria

Participants will be healthy and right handed smartphone users who aged 18-40 years old. They should not be affected by musculoskeletal, visual or auditory disorders

Intervention groups

Participants in control group will text by a smartphone for 15 minutes and after 1 minute rest will continue the activity for 15 minutes. In McKenzie group participants will do the same task as control group, but instead of passive rest they will do McKenzie exercises. In kinesio taping group before beginning the task taping will be done, task and resting will be the same as control group

Main outcome variables

Discomfort; type of muscle performance; fluctuation slope of median frequency; fluctuation slope of root mean square of electromyographic values

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20220226054127N1**

Registration date: **2022-04-09, 1401/01/20**

Registration timing: **prospective**

Last update: **2022-04-09, 1401/01/20**

Update count: **0**

Registration date

2022-04-09, 1401/01/20

Registrant information

Name

Ehsan Naeimi

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 81 3825 0433

Email address

naeimiehsan.pt@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2022-04-14, 1401/01/25

Expected recruitment end date

2022-07-16, 1401/04/25

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

A comparison between McKenzie exercise and kinesio taping effect onelectrophysiological parameters of cervical muscle performance in smartphone users

Public title

A comparison between McKenzie exercise and kinesio taping effect onelectrophysiological parameters of cervical muscle performance in smartphone users

Purpose

Prevention

Inclusion/Exclusion criteria

Inclusion criteria:

Using smartphone Right handed Neck disability index lower than 10 percent or 5 score 18-40 years old

Exclusion criteria:

Neck or shoulder pain problem Upper extremity radicular pain Upper extremity numbness History of chronic neck, sholder, back or leg pain Auditory disorders Eye disorders including ocular surface disorder and computer vision syndrome Visual weakness

Age

From **18 years** old to **40 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Data analyser

Sample size

Target sample size: **24**

Randomization (investigator's opinion)

Randomized

Randomization description

Participants will attend in laboratory in different 3 days. Sequence of allocation of the participants to 3 groups will be defined by <https://statpages.info/latinsq.html> website. In this website 6 sequences (ABC, BCA, CAB, CBA, ACB, BAC) is defined based on Williams square design. Each time one of them will be chosen by chance.

Blinding (investigator's opinion)

Single blinded

Blinding description

Examiner will gather data, then will send them to advisor, she allocate a code to each data and send them to analyser, so the analyser will be blinded.

Placebo

Not used

Assignment

Crossover

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committees of School of Nursing and Midwifery & Rehabilitation - Tehran University o

Street address

School of Rehabilitation of Tehran University of Medical Sciences

City

Tehran

Province

Tehran

Postal code

1148965111ehran

Approval date

2022-02-23, 1400/12/04

Ethics committee reference number

IR.TUMS.FNM.REC.1400.212

Health conditions studied

1

Description of health condition studied

Cervical muscle fatigue

ICD-10 code

Z57

ICD-10 code description

Occupational exposure to risk factors

Primary outcomes

1

Description

Fluctuation slope of median frequency

Timepoint

Beginning the task and every 2 minutes

Method of measurement

Surface electromyography

2

Description

Fluctuation slope of root mean square

Timepoint

Beginning the task and every 2 minutes

Method of measurement

Surface electromyography

Secondary outcomes

1

Description

Type of muscle performance

Timepoint

Beginning the task and every 2 minutes

Method of measurement

Surface electromyography instrument and Joint Analysis of Spectrum and Amplitude

2

Description

Neck disability index

Timepoint

Before and after doing the task

Method of measurement

Persian neck disability index questionnaire

3

Description

Numeric rating scale

Timepoint

Before and after doing the task

Method of measurement

Numeric Rating Scale questionnaire

4

Description

Neck flexion angle

Timepoint

Every 2 minutes

Method of measurement

Imaging and measuring the angle by Kinovea software

5

Description

Head flexion angle

Timepoint

Every 2 minutes

Method of measurement

Imaging and measuring the angle by Kinovea software

Intervention groups

1

Description

Control group: Participants text with a smartphone for 15 minutes, then they rest for 1 minute, afterwards they continue the task for 15 minutes.

Category

Prevention

2

Description

First intervention group: Participants text with a smartphone for 15 minutes, then they do 2 McKenzie exercises for 1 minutes, afterwards they continue the task for 15 minutes.

Category

Prevention

3

Description

Second intervention group: Before Beginning of the task Kinesio Tapes are attached to cervical region of participants by a specific method, then they text with a

smartphone for 15 minutes, then they rest for 1 minute, afterwards they continue the task for 15 minutes.

Category

Prevention

Recruitment centers

1

Recruitment center

Name of recruitment center

Rehabilitation School of Tehran University of Medical Sciences

Full name of responsible person

Ehsan naeimi

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

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Full name of responsible person

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Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?

Yes

Title of funding source

Tehran 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

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Person responsible for general inquiries**Contact****Name of organization / entity**

Tehran University of Medical Sciences

Full name of responsible person

Ehsan Naeimi

Position

PhD. Candidate

Latest degree

Master

Other areas of specialty/work

Physiotherapy

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Sharing plan**Deidentified Individual Participant Data Set (IPD)**

Undecided - It is not yet known if there will be a plan to
make this available

Study Protocol

Undecided - It is not yet known if there will be 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

Undecided - It is not yet known if there will be a plan to
make this available

Clinical Study Report

Undecided - It is not yet known if there will be 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

Undecided - It is not yet known if there will be a plan to
make this available