Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 2026

A comparison between McKenzie exercise and kinesio taping effect onelectrophysiological 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, Sternoclidomastoid 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 questionaires. 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 rihgt 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)

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+98 81 3825 0433

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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 disoders 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 questionaire

3

Description
Numeric rating scale
Timepoint
Before and after doing the task
Method of measurement
Numeric Rating Scale questionaire

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
Tehran University of Medical Sciences
Full name of responsible person
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Sixth floor, Central Organization of Tehran University of Medical Sciences, Qods Ave., Keshavarz Blvd.
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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

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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Person responsible for updating data

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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