

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Emotion recognition using connectivity features between cardiac and forehead biosignals

Protocol summary

Study aim

Evaluation of connectivity features between cardiac and brain signals in emotion recognition

Design

Quasi-experimental clinical trial, Before-after design, One intervention group with 6 healthy subjects

Settings and conduct

This study is carried out on emotion recognition using the heart-brain connectivity at Tarbiat Modares University of Iran. The procedure: 1. Gathering validated emotional clips 2. Pilot signal acquisition 3. Assessment of pilot signals before the main acquisition 4. Forehead and cardiac biosignal acquisition from the participants before and after emotional intervention 5. Biosignal analysis and emotion recognition system design

Participants/Inclusion and exclusion criteria

Inclusion criteria: Female, Healthy, University student, Aged between 24 to 30 years, Normal or corrected-to-normal vision. Exclusion criteria: History of neurological diseases, Medication use, Unpleasant mental effect by emotional clips, Fasting

Intervention groups

Intervention group: Displaying six emotional video clips to participants in order to induce six basic emotions, while recording cardiac and forehead bioelectric signals.

Main outcome variables

Brain neural activity, Cardiac neural activity

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200410047015N1**

Registration date: **2020-04-27, 1399/02/08**

Registration timing: **retrospective**

Last update: **2020-04-27, 1399/02/08**

Update count: **0**

Registration date

2020-04-27, 1399/02/08

Registrant information

Name

Vesal Moaiyed

Name of organization / entity

Tarbiat Modares University

Country

Iran (Islamic Republic of)

Phone

+98 41 3385 6303

Email address

vesal.moaiyed@modares.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-05-31, 1396/03/10

Expected recruitment end date

2017-06-10, 1396/03/20

Actual recruitment start date

2017-05-31, 1396/03/10

Actual recruitment end date

2017-06-10, 1396/03/20

Trial completion date

2017-06-10, 1396/03/20

Scientific title

Emotion recognition using connectivity features between cardiac and forehead biosignals

Public title

Emotion recognition using heart-brain connectivity

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Female Aged between 24 to 30 years University student

Healthy Normal or corrected-to-normal vision

Exclusion criteria:

History of neurological diseases Medication use
Unpleasant mental effect by emotional clips Fasting

Age

From **24 years** old to **30 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **6**

Actual sample size reached: **6**

Randomization (investigator's opinion)

N/A

Randomization description

Blinding (investigator's opinion)

Not blinded

Blinding description

Placebo

Not used

Assignment

Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Research Ethics Committee of Tarbiat Modares
University

Street address

Tarbiat Modares University, Nasr Bridge, Jalal-Ale-
Ahmad

City

Tehran

Province

Tehran

Postal code

14115-111

Approval date

2017-01-18, 1395/10/29

Ethics committee reference number

IR.TMU.REC.1395.497

Health conditions studied

1

Description of health condition studied

Healthy individuals

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Brain neural activity

Timepoint

Before the intervention, While displaying the neutral
video, While displaying the emotional videos

Method of measurement

Acquisition of forehead bioelectric signals

2

Description

Cardiac neural activity

Timepoint

Before the intervention, While displaying the neutral
video, While displaying the emotional videos

Method of measurement

ECG acquisition

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: Displaying six emotional video clips
to participants to induce six basic emotions (Anger,
Disgust, Fear, joy, Sadness, Surprise), while recording
cardiac and forehead bioelectric signals. Also, a neutral
video was displayed before each emotional video.

Category

Other

Recruitment centers

1

Recruitment center

Name of recruitment center

Tarbiat Modares University

Full name of responsible person

Vesal Moaiyed

Street address

Department of Medical Physics, Faculty of Medical
Sciences, Tarbiat Modares University, Nasr Bridge,
Jalal-Ale-Ahmad

City

Tehran

Province

Tehran

Postal code

14115-331

Phone

+98 21 8288 3821

Email

v.moaiyed@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tarbiat Modares University

Full name of responsible person

Yaghoub Fathollahi

Street address

Vice Chancellor for Research and Technology, Tarbiat Modares University, Nasr Bridge, Jalal-Ale-Ahmad

City

Tehran

Province

Tehran

Postal code

14115-111

Phone

+98 21 8288 2009

Email

res@modares.ac.ir

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

Yes

Title of funding source

Tarbiat Modares University

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

Tarbiat Modares University

Full name of responsible person

Vesal Moaiyed

Position

Researcher

Latest degree

Master

Other areas of specialty/work

Medical Engineering

Street address

Bioelectromagnetics Laboratory, Department of Medical Physics, Faculty of Medical Sciences, Tarbiat Modares University

City

Tehran

Province

Tehran

Postal code

14115-331

Phone

+98 21 8288 3839

Email

v.moaiyed@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Tarbiat Modares University

Full name of responsible person

Mohammad Firoozabadi

Position

Professor

Latest degree

Ph.D.

Other areas of specialty/work

Medical Engineering

Street address

Department of Medical Physics, Faculty of Medical Sciences, Tarbiat Modares University

City

Tehran

Province

Tehran

Postal code

14115-331

Phone

+98 21 8288 3821

Email

pourmir@modares.ac.ir

Person responsible for updating data

Contact

Name of organization / entity

Tarbiat Modares University

Full name of responsible person

Vesal Moaiyed

Position

Researcher

Latest degree

Master

Other areas of specialty/work

Medical Engineering

Street address

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14115-331

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Email

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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

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

Title and more details about the data/document

All participants' data, after anonymization, will be shared through local and international biosignal online

databases. The study protocol, statistical analysis map and informed consent can also be shared.

When the data will become available and for how long

Data and documents will be available for an unlimited period once the results are published.

To whom data/document is available

University researchers

Under which criteria data/document could be used

Commitment to mention the source of data and the name of principal investigator for any use, Commitment not to use for clinical purposes

From where data/document is obtainable

Correspondence with the representative of principal investigator, Vesal Moaiyed, with email address: v.moaiyed@gmail.com

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

Request review by the representative of principal investigator (2 weeks), Sharing the application with the principal investigator (2 weeks), Final statement by the representative of principal investigator

Comments