

Clinical Trial Protocol

Iranian Registry of Clinical Trials

11 Sep 2026

Music-induced emotion recognition based on information fusion of forehead biopotentials and acoustic content in healthy women

Protocol summary

Study aim

Evaluation of simultaneous use of biological signals and music acoustic content in music-induced emotion recognition

Design

Quasi-experimental clinical trial, Before-after design, One intervention group with 9 healthy subjects

Settings and conduct

This study focuses on recognizing music-induced emotions using biological signals and music acoustic content, at Tarbiat Modares University of Iran. The procedure: 1. Gathering validated emotional music pieces to induce basic emotions, 2. Biological signal acquisition from the participants before and after emotional interventions, 3. Biosignal analysis and emotion recognition system design. In this step, we will focus on statistical analysis and classification methods based on information fusion of biosignals and acoustic content of played music. The recorded forehead biopotentials contain information about EEG, EOG and facial EMG signals, which will be separated at the signal processing step.

Participants/Inclusion and exclusion criteria

Inclusion criteria: Female, aged between 23 to 32 years, healthy, have normal or corrected-to-normal vision, university student. Exclusion criteria: Have history of neurological diseases, medication use, fasting.

Intervention groups

Intervention group: 9 healthy females. In one session: 1. Playing a piece of neutral music (the sound of waterfall) to induce neutral feelings, 2. Playing emotional music pieces to induce two basic emotions (Happiness, Sadness), while recording forehead biopotentials. The device FlexComp Infiniti (Thought Technology Ltd, Montreal, QC), along with the golden electrodes, will be used to record forehead biopotentials.

Main outcome variables

Forehead neural activity

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20200212046473N2**

Registration date: **2020-06-05, 1399/03/16**

Registration timing: **retrospective**

Last update: **2020-06-05, 1399/03/16**

Update count: **0**

Registration date

2020-06-05, 1399/03/16

Registrant information

Name

Zeynab Khodakarami

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 21 5121 5080

Email address

z.khodakarami@modares.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2017-05-22, 1396/03/01

Expected recruitment end date

2017-06-10, 1396/03/20

Actual recruitment start date

2017-05-22, 1396/03/01

Actual recruitment end date

2017-06-10, 1396/03/20

Trial completion date

2017-06-10, 1396/03/20

Scientific title

Music-induced emotion recognition based on information fusion of forehead biopotentials and acoustic content in healthy women

Public title

Emotion recognition using forehead biopotentials and acoustic content

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Aged between 23 to 32 years Healthy Have normal or corrected-to-normal vision University student

Exclusion criteria:

Have history of neurological diseases (e.g. migraine or epilepsy) Medication use Fasting

Age

From **23 years** old to **32 years** old

Gender

Female

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **9**

Actual sample size reached: **9**

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.1395.477

Health conditions studied

1

Description of health condition studied

Healthy individuals

ICD-10 code

ICD-10 code description

2

Description of health condition studied

Emotional states

ICD-10 code

ICD-10 code description

3

Description of health condition studied

Forehead biopotentials

ICD-10 code

ICD-10 code description

4

Description of health condition studied

Acoustic content

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Forehead neural activity

Timepoint

While playing neutral music pieces, While playing emotional music pieces

Method of measurement

Recording forehead bioelectric signals

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: 9 healthy females. In one session: 1. Playing a piece of neutral music (the sound of waterfall) to induce neutral feelings, 2. Playing emotional music pieces to induce two basic emotions (Happiness, Sadness), while recording forehead biopotentials. The device FlexComp Infinity (Thought Technology Ltd, Montreal, QC), along with the golden electrodes, will be used to record forehead biopotentials.

Category

Other

Recruitment centers**1****Recruitment center****Name of recruitment center**

Tarbiat Modares University

Full name of responsible person

Zeynab Khodakarami

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

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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

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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**

Modares Science and Technology Park

Full name of responsible person

Zeynab Khodakarami

Position

Researcher

Latest degree

Master

Other areas of specialty/work

Medical Engineering

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No. 15, Heyat St., Eshraghi Alley, North Karegar Ave.

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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

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Person responsible for updating data

Contact

Name of organization / entity

Modares Science and Technology Park

Full name of responsible person

Zeynab Khodakarami

Position

Researcher

Latest degree

Master

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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 once the results are published for an unlimited period.

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, Zeynab Khodakarami, with email address: z.khodakarami@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