Clinical Trial Protocol
Iranian Registry of Clinical Trials

22 Nov 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)
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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 Infiniti (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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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Tarbiat Modares University
Full name of responsible person
Yaghoub Fathollahi
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Vice Chancellor for Research and Technology, Tarbiat Modares University, Nasr Bridge, Jalal-Ale-Ahmad
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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
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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Person responsible for scientific inquiries

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Name of organization / entity
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Professor
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Person responsible for updating data

Contact

Name of organization / entity
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Full name of responsible person
Zeynab Khodakarami

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Researcher

Latest degree
Master

Other areas of specialty/work
Medical Engineering

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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