

Clinical Trial Protocol

Iranian Registry of Clinical Trials

17 Jun 2026

Investigating the relationship between cognitive emotion regulation (CER) with cognitive performance through physiological indices and determining the appropriate characteristics of predictive stimulus of cognitive performance

Protocol summary

Study aim

determine the relationship between cognitive emotion regulation (CER) with cognitive performance and physiological indices

Design

a parallel pseudo randomized trial group design of 40 control room operators in Combined Cycle Power Plant. Based on the results of the CERQ questionnaire, individuals divided into appropriate and inappropriate groups and then each group, divided into control and intervention groups.

Settings and conduct

This research will be conducted on control room operators of Combined Cycle Power Plant. First the CERQ will be administered and based on the results people will be divided into appropriate and inappropriate groups in terms of cognitive emotion regulation ability. Then they will be invited to attend the DANA Brain Health Institute. Intervention group will encounter emotional stimuli and their physiological signals will be recorded simultaneously. Then their cognitive performance will be examined using CANTAB (Cambridge Neuropsychological Test Automated Battery) cognitive test. Control group will not experience any emotional stimuli and just their cognitive performance will be assessed.

Participants/Inclusion and exclusion criteria

Fars Combined Cycle Power Plant Control Room Staff, Being at least 24 years old, Having at least 4 years of work experience, No history of neurosurgery, No history of mental illness and related medications.

Intervention groups

intervention group: watch stimuli from emotional image bank (IAPS: International Affective Picture System)
control group: no stimuli An emotional image bank known as IAPS was used for the intervention. This set includes heartbreaking and calming images, etc.

Main outcome variables

Cognitive performance (CANTAB), Physiological indices (Heart Rate, Respiration, Electromyography), Emotional stimulus profile predicts optimal cognitive performance (based on emotional coordinates)

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20191228045922N1**

Registration date: **2020-11-22, 1399/09/02**

Registration timing: **registered_while_recruiting**

Last update: **2020-11-22, 1399/09/02**

Update count: **0**

Registration date

2020-11-22, 1399/09/02

Registrant information

Name

Zahra Ghanbari

Name of organization / entity

Country

Iran (Islamic Republic of)

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+98 71 3620 9751

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ghanbari_az@sums.ac.ir

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2020-07-22, 1399/05/01

Expected recruitment end date

2020-12-21, 1399/10/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigating the relationship between cognitive emotion regulation (CER) with cognitive performance through physiological indices and determining the appropriate characteristics of predictive stimulus of cognitive performance

Public title

survey the relationship between cognitive emotion regulation (CER) with cognitive performance and physiological indices

Purpose

Supportive

Inclusion/Exclusion criteria**Inclusion criteria:**

Fars Combined Cycle Power Plant Control Room Staff
Being at least 24 years old Having at least 4 years of work experience

Exclusion criteria:

history of neurosurgery history of mental illness and related medications

Age

From **24 years** old

Gender

Male

Phase

N/A

Groups that have been masked

No information

Sample size

Target sample size: **40**

Randomization (investigator's opinion)

Not randomized

Randomization description**Blinding (investigator's opinion)**

Not blinded

Blinding description**Placebo**

Not used

Assignment

Parallel

Other design features

This research will be done in two phases. In the first phase, using the CER questionnaire, the state of cognitive regulation of emotion in the study group will be examined and individuals will be divided into two groups: appropriate and inappropriate from this perspective (people in the appropriate group use positive strategies to cognitively regulate their emotions in upsetting situations). Then, people in each group will form two subgroups (intervention and control) with the same number of members. Members of the intervention subgroup of both groups (appropriate and inappropriate)

will experience visual emotional stimuli (IAPS: International Affective Picture System) and will complete the SAM questionnaire, then they will be asked to take standardized cognitive function tests. It should be noted that physiological indicators are also recorded simultaneously. For members of the control subgroup in both groups (appropriate and inappropriate), the above steps will be performed, with this difference that emotional stimuli will not be displayed for the control group. In the second phase, the results of the first stage will be used to define the specifications of the capacity and excitability of the emotional stimulus that has led to the optimal performance, and based on that, and using related databases, the stimulus with the level of arousal and valence will be available. Then, taking into account the stimulus obtained as an intervention, the steps of measuring the physiological index and the performance measurement test will be performed.

Secondary Ids

empty

Ethics committees**1****Ethics committee****Name of ethics committee**

Ethics committee of Tehran University of Medical Sciences

Street address

Unit 3, Block 45, Sarvenaz residential complex, Golzar St, Golestan town, Shiraz

City

Shiraz

Province

Fars

Postal code

7189883764

Approval date

2019-04-20, 1398/01/31

Ethics committee reference number

IR.TUMS.SPH.REC.1398.003

2**Ethics committee****Name of ethics committee**

Ethics committee of Shiraz University of Medical Sciences

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Approval date

2019-11-19, 1398/08/28

Ethics committee reference number

Health conditions studied

1

Description of health condition studied

Cognitive Emotion Regulation (CER)

ICD-10 code

ICD-10 code description

2

Description of health condition studied

Cognitive Performance

ICD-10 code

ICD-10 code description

3

Description of health condition studied

Physiological Indices

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

Cognitive Performance: Mental performance 1 hour after intervention.

Timepoint

in both control and intervention group, at the end of the experiment.

Method of measurement

computerized cognitive tests (Cambridge Neuropsychological Test Automated Battery: CANTAB).

2

Description

physiological indices: Heart rate, respiration and electromyography.

Timepoint

during the experiment.

Method of measurement

Polygraphy and HEG.

Secondary outcomes

empty

Intervention groups

1

Description

Intervention group: IAPS. According to this concept that emotion has two main components of arousal and valence, it is necessary to determine these two components in emotion-oriented research. For this

purpose, a standard and global database is used, which includes a set of images that arousal and valence of them has been determined. This bank is called International Affective Picture System (IAPS). This emotional image pack contains 10 loaded block and 11 neutral block (neutral blocks will present between loaded blocks) and each block contains 13 images. Each image presents for 5 seconds.

Category

N/A

2

Description

Control group: without IAPS

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Combined Cycle Power Plant

Full name of responsible person

Zahra Ghanbari

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Unit 3, Block 45, Sarvenaz residential complex, Golzar St, Golestan town, Shiraz

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Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

Dr.Seyyed Aboualfazl Zackeriyan

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School of Public Health, Tehran University of Medical Sciences, Enqelab Square.

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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

25

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

2

Sponsor

Name of organization / entity

Shiraz University of Medical Sciences

Full name of responsible person

Dr.AliReza Choobineh

Street address

Ergonomics Department, school of Health, Razi 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

Shiraz University of Medical Sciences

Proportion provided by this source

75

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

Zahra Ghanbari

Position

PhD Candidate

Latest degree

Master

Other areas of specialty/work

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Position

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Latest degree

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Other areas of specialty/work

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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

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

Not applicable

Analytic Code

Not applicable

Data Dictionary

Not applicable

Title and more details about the data/document

Part of data like the intervention effect can be shared.

When the data will become available and for how long

Access will be start 12 months after publications.

To whom data/document is available

Researchers working in academic and scientific institutions.

Under which criteria data/document could be used

Contact people in charge of research.

From where data/document is obtainable

- Zahra Ghanbari (Ghanbari_az@yahoo.com) -

Dr.A.Choobineh (alrchoob@yahoo.com)

Dr.S.A.Zackerian (szakerian@gmail.com)

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

The person should contact email addresses provided above. The minimum access time is estimated to be one month.

Comments