

Clinical Trial Protocol

Iranian Registry of Clinical Trials

19 Jun 2026

Evaluating perceptual learning caused by combined auditory training interventions including active listening and passive hearing in young old adults.

Protocol summary

Study aim

in this study, we will use double vowels discrimination and combined auditory training program to measuring the perceptual learning in young old adults.

Design

A multi-arm randomized clinical trial with control group, random allocation using sealed envelopes and outcome assessor blind. this study will be performed in a one phase on 30 people. for random allocation, group names was written on different cards and put in an envelope and We take a card for each participant

Settings and conduct

After conducting initial assessments and ensuring that inclusion criteria are met double vowel identification test and CV in noise test was evaluated, after then participants were randomly allocated to one of the 3 groups and received auditory training program for 4-12 session, after the intervention both test were evaluated again.

Participants/Inclusion and exclusion criteria

all participant with age of 65-74 years old can participate in this study with the following entry criteria: the behavioral pure-tone audiometry threshold levels of ≤ 40 dBHL in octave frequencies of 250-8000 Hz, right handedness, not having a remarkable cognitive problems according to MMSE (MMSE over 28), no previous formal musical training, inclination to continue the test in any of the test steps and no difficulty to understand the task

Intervention groups

during the intervention, double vowels with different Δf_0 provided, participants should identify both vowels after hearing each stimulus and Δf_0 changed adaptability. in the other hand for each correct recognition answer, Δf_0 decreased in 3 level and for any wrong answer Δf_0 increased in 1 level.

Main outcome variables

double vowel identification score speech perception in

noise

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20151005024360N4**

Registration date: **2021-03-03, 1399/12/13**

Registration timing: **prospective**

Last update: **2021-03-03, 1399/12/13**

Update count: **0**

Registration date

2021-03-03, 1399/12/13

Registrant information

Name

Akram Pourbakht

Name of organization / entity

Country

Iran (Islamic Republic of)

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Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2021-04-04, 1400/01/15

Expected recruitment end date

2021-05-05, 1400/02/15

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Evaluating perceptual learning caused by combined auditory training interventions including active listening and passive hearing in young old adults.

Public title

The effect of combined auditory training program in older adults

Purpose

Supportive

Inclusion/Exclusion criteria

Inclusion criteria:

Age between 65 and 74 years Behavioral pure-tone audiometry threshold levels of ≤ 40 dBHL in octave frequencies of 250–8000 Hz Right-handedness No remarkable cognitive problems (MMSE over 28)

Exclusion criteria:

History of continuous participation in music education classes and professional music practice Difficulty to understand the task or follow the instructions Disinclination to continue the test in any of the test steps

Age

From **65 years** old to **74 years** old

Gender

Both

Phase

N/A

Groups that have been masked

- Outcome assessor

Sample size

Target sample size: **30**

Randomization (investigator's opinion)

Randomized

Randomization description

Simple random allocation with sealed envelopes first intervention group, second intervention group and control group are written on cards. These cards are placed in the envelope, The person (responsible for carrying out the auditory training program) picks up a card from the envelope for each client and implements the relevant auditory training program accordingly.

Blinding (investigator's opinion)

Single blinded

Blinding description

in this study, outcome assessor have no information about study groups. Actually outcome assessor is responsible for implementing the auditory training program.

Placebo

Not used

Assignment

Parallel

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee

Ethics committee of Iran University of Medical Sciences

Street address

Iran University Campus, Hemmat freeway, next to Milad tower, Tehran,

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Postal code

۱۴۳۹۶۱۴۵۳۵

Approval date

2020-10-28, 1399/08/07

Ethics committee reference number

IR.IUMS.REC.1399.721

Health conditions studied

1

Description of health condition studied

speech perception in noise

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description

double vowel identification

Timepoint

Before and after intervention

Method of measurement

double vowel identification score

Secondary outcomes

1

Description

Speech perception in noise

Timepoint

Before and after intervention

Method of measurement

CV in noise test

Intervention groups

1

Description

Intervention group 1: They receive a auditory training program in half of the session time, (identifying 180 trials of double vowels) and in the other half the session,

participants performing a visual-spatial task (Tetris game) And during which 180 trials of double vowels will be provided via the head-phone in the background.

Category

Rehabilitation

2**Description**

Intervention group 2: in this group participants performing a visual-spatial task (Tetris game) in all session time And during which 360 trials of double vowels will be provided via the head-phone in the background.

Category

Rehabilitation

3**Description**

Control group: in this group listeners actually performed the routine auditory training using discrimination of 360 trail of double vowel in whole time of the session

Category

Rehabilitation

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

Health center on Hashtgerd county

Full name of responsible person

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Sponsors / Funding sources**1****Sponsor****Name of organization / entity**

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Full name of responsible person

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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

Iran 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**

Iran University of Medical Sciences

Full name of responsible person

Akram Pournakht

Position

Associate professor

Latest degree

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Other areas of specialty/work

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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

No - There is not 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

Person responsible for updating data**Contact****Name of organization / entity**

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Other areas of specialty/work