Clinical Trial Protocol
Iranian Registry of Clinical Trials

16 Sep 2026

Investigating the effect of music on the cognitive performance and task performance of female operators in the assembly operation of a medical equipment manufacturing company in Isfahan

Protocol summary

Study aim
Investigating the effect of music on the cognitive performance and task performance of female operators in the assembly operation of a medical equipment manufacturing company in Isfahan

Design
All the evaluations in this study will be done on all study participants in one work shift and all people will be compared in different modes of playing music and not playing music.

Settings and conduct
The present research will be conducted among female assemblers working in a medical equipment manufacturing industry (serum set) in Isfahan city. In this study, fatigue and sleepiness using the Flicker Fusion device, cognitive performance (working memory, sustained attention) using cognitive tests such as CPT, N-Back and measuring task performance by counting the number of products in two modes of the music section and Failure to play music will be assessed.

Participants/Inclusion and exclusion criteria
Conditions for entering the study: People do not have a history of diseases affecting cognitive function such as psychological diseases. Before entering the study, people should not take drugs that affect cognitive function, such as sleeping pills. People should not consume caffeine 8 hours before the test. People should have enough rest and sleep the night before the test. People have general health. People are not in their menstrual period. People must consent to participate in the study Conditions for withdrawing from the study: Dissatisfaction and declaration of withdrawal from continuing to participate in the study for any reason

Intervention groups
In this research, only one group of available female operators (including 81 people) will be studied in two modes of playing music and not playing music.

Main outcome variables
Working memory, sustained attention and task performance

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20231220060479N1**
Registration date: **2024-01-01, 1402/10/11**
Registration timing: **prospective**

Last update: **2024-01-01, 1402/10/11**
Update count: **0**

Registration date
2024-01-01, 1402/10/11

Registrant information

Name
Mahnaz Shakerian

Name of organization / entity

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Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2024-02-20, 1402/12/01

Expected recruitment end date
2024-09-22, 1403/07/01

Actual recruitment start date
empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
Investigating the effect of music on the cognitive performance and task performance of female operators in the assembly operation of a medical equipment manufacturing company in Isfahan

Public title
Effect of music on the cognitive performance
Purpose
Supportive
Inclusion/Exclusion criteria
Inclusion criteria:
People do not have a history of diseases affecting cognitive function such as psychological diseases. Before entering the study, people should not take drugs that affect cognitive function, such as sleeping pills. People should not consume caffeine 8 hours before the test. People should have enough rest and sleep the night before the test. People have general health. People are not in their menstrual period. People must consent to participate in the study.
Exclusion criteria:
Dissatisfaction and declaration of withdrawal from continuing to participate in the study for any reason
Age
From **18 years** old
Gender
Female

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **81**
Randomization (investigator's opinion)
N/A
Randomization description
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Single
Other design features
The current research is a cross-sectional-descriptive analytical study that will be conducted among 95 female assemblers working in the medical equipment manufacturing industry (serum sets) in Isfahan city. In this industry, personnel work in 2 shifts and each shift is 8 hours long in the assembly unit. Data sampling will be collected using the method of direct observation of the work process, conducted by the research team, interviews of assembly personnel and unit supervisors, questionnaires and cognitive tests. The steps of the research will be carried out as follows:1. Collecting demographic information about the participants2. Evaluation of introversion/extroversion of the participants using the NEO-FFI questionnaire3. Evaluation of fatigue and sleepiness using the Flicker Fusion device4. Evaluation of cognitive status using cognitive tests such as CPT, N-Back5. Measurement of task performance by counting the number of products and checking the assembly error of parts by observing and collecting industry quality control information.All the tests mentioned above will be done in one work shift and in different modes of playing music and not playing music.Music will be used as an intervention in this study and will be played through a loudspeaker with the same volume for all participants in the music effect test stage. Investigating the effect of music on the cognitive performance and task performance of people during a work shift, music will be played during a work shift and throughout the duration of the work shift.Note 1: Considering the past studies on the study of the effect of music and the selection of classical types of music, in this study also classical music will be used.Note 2: The type of music will be selected without words and in a non-aggressive manner, taking into account the culture and beliefs of the society, with an emphasis on the music approved by the Ministry of Culture and Islamic Guidance.

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Ethics committee of Isfahan University of Medical Sciences
Street address
Isfahan University of Medical Sciences Hezar Jerib street, Isfahan, Iran
City
Isfahan
Province
Isfehan
Postal code
81746-73461
Approval date
2023-06-19, 1402/03/29
Ethics committee reference number
IR.MUI.RESEARCH.REC.1402.107

Health conditions studied

1

Description of health condition studied
Cognitive performance (working memory, sustained attention) of female operators in the assembly operation of a medical equipment manufacturing company in Isfahan
ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Cognitive performance (working memory, sustained attention)
Timepoint
In this study, variables of working memory and sustained attention will be evaluated at the beginning and end of the work shift.
Method of measurement
Using working memory by active memory test (N-Back) and sustained attention using Continuous Performance Test (CPT)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: In this group, all female operators working in the desired industry are evaluated in terms of cognitive performance in the music playing mode at the beginning and end of the shift work , and as a result, their performance at the beginning and end of the shift is compared.
Category
N/A

2

Description
Control group: In this group, all the female operators working in the desired industry are evaluated in terms of cognitive performance at the beginning and end of the shift without playing music, and as a result, their performance at the beginning and end of the shift is compared.
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Mehrtab Jey Company
Full name of responsible person
Melika Abbasi
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
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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
Esfahan 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
Esfahan University of Medical Sciences
Full name of responsible person
Mahnaz Shakerian
Position
Assisstanat professor
Latest degree
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Other areas of specialty/work
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
No - There is not a plan to make this available
Justification/reason for indecision/not sharing IPD
There is no further information.
Study Protocol
Undecided - It is not yet known if there will be 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
Undecided - It is not yet known if there will be a plan to make this available
Data Dictionary
Not applicable