Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The effectiveness of divergent thinking training on creativity, self-confidence, and self-efficacy

Protocol summary

Study aim
Determining the effectiveness of divergent thinking training on creativity, self-confidence, and self-efficacy in students

Design
This study is a randomized, double-blind, parallel-group clinical trial conducted in Phase 2 on 30 female high school students in Izeh city (15 in each group). The sample allocation is done by simple random method using the RAND function in Excel software; first, each participant receives an identification code and is divided into two groups of 15 based on a random number.

Settings and conduct
This research will use a field experimental research method and a large-scale pre-test and post-test design. The research will be conducted in girls' high schools in Izeh city. All participants, educational instructors, and evaluators who interpret the data will be kept confidential and all information will be used as pseudonyms.

Participants/Inclusion and exclusion criteria
Inclusion Criteria Must be at least 15 and at most 18 years old. Must be a student in the second period of secondary school Must have consent to participate in the research. Exclusion Criteria Having a physical illness that interferes with the treatment process. Taking psychiatric medications. Having a history of substance or psychoactive drug use.

Intervention groups
Intervention group: Divergent thinking training based on the Badri et al. 2013 protocol is implemented in 12 90-minute sessions, one session per week, in a group setting. Control group: Do not receive any intervention.

Main outcome variables
Creativity; self-confidence; self-efficacy.

General information

Reason for update

Acronym

IRCT registration information
IRCT registration number: **IRCT20260823070758N1**
Registration date: **2026-08-24, 1405/06/02**
Registration timing: **prospective**

Last update: **2026-08-24, 1405/06/02**
Update count: **0**

Registration date
2026-08-24, 1405/06/02

Registrant information

Name
Tahereh Norouzi

Name of organization / entity

Country
Iran (Islamic Republic of)

Phone
+98 939 008 7375

Email address
esmaeilinavid@gmail.com

Recruitment status
Recruitment complete

Funding source

Expected recruitment start date
2026-09-11, 1405/06/20

Expected recruitment end date
2026-09-21, 1405/06/30

Actual recruitment start date
empty

Actual recruitment end date
empty

Trial completion date
empty

Scientific title
The effectiveness of divergent thinking training on creativity, self-confidence, and self-efficacy

Public title
The effectiveness of divergent thinking training
Purpose
Education/Guidance
Inclusion/Exclusion criteria
Inclusion criteria:
Must be at least 15 and at most 18 years old. Must be a student in the second period of secondary school Must have consent to participate in the research.
Exclusion criteria:
Having a physical illness that interferes with the treatment process. Taking psychiatric medications. Having a history of substance or psychoactive drug use.
Age
From **15 years** old to **18 years** old
Gender
Female

Phase
N/A
Groups that have been masked

- Care provider
- Outcome assessor
- Data analyser

Sample size
Target sample size: **30**
Randomization (investigator's opinion)
Randomized
Randomization description
In this study, simple randomization method is used to assign participants to two experimental and control groups. The randomization unit in this study is female high school students in Izeh city who are eligible to enter the study. First, a complete list of volunteer students who have been selected based on the study entry criteria is prepared. Then, each participant is assigned a unique numerical identification code. These codes are entered into the Random Number Generator software and a random number is generated for each individual. After generating these numbers, the participants are sorted in ascending order based on the value of the random number. Then, the individuals are assigned to two groups; sequentially, the first 15 people on the list are assigned to the experimental group (divergent thinking training) and the next 15 people are assigned to the control group. With this method, the order of entry into the study and the researcher's knowledge of the participants will not play any role in determining the group. To conceal allocation, the person responsible for entering data and performing the randomization process in the software will be independent of the training facilitator and the assessors of the creativity, self-confidence, and self-efficacy variables and will not have the opportunity to know the process of implementing the sessions or changes in the allocation of individuals. Also, the identification codes of the students will be kept confidential and separate from their other personal and educational information. Therefore, it will not be possible to predict the assigned group for each student before the randomization process.
Blinding (investigator's opinion)
Double blinded
Blinding description
In order to control bias and improve internal validity of the study, this study was designed with a double-blind protocol; in this way, the educational instructors, outcome assessor, and data analyst will be kept unaware of the allocation of female students to the experimental and control groups. In this process, the outcome assessor will collect data at all stages of the pretest, posttest, and follow-up, without knowing the assigned group of the participants, in order to prevent bias in the measurement; also, all raw data will be provided to the statistical analyst with anonymous codes (such as groups 1 and 2), and the true nature of the groups will not be revealed until the end of the data analysis process. All allocation steps will be performed by an individual independent of the research team, and decoding of allocation codes will be done only after the final completion of the statistical analyses.
Placebo
Not used
Assignment
Parallel
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
Behbahan Islamic Azad University Ethics Committee
Street address
Shahid Bayani St., Amir Kabir Blvd.
City
Behbahan
Province
Khouzestan
Postal code
6361713198
Approval date
2026-07-01, 1405/04/10
Ethics committee reference number
IR.IAU.BEHBAHAN.REC.1405.171

Health conditions studied

1

Description of health condition studied
Self-esteem problems in adolescents
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Creativity
Timepoint
before performing the intervention and two weeks after completion of the intervention
Method of measurement
Torrance Creativity Questionnaire, 1979

2

Description
Self-confidence
Timepoint
before performing the intervention and two weeks after completion of the intervention
Method of measurement
Self-confidence questionnaire Moradi et al. (2014)

3

Description
Self-efficacy
Timepoint
before performing the intervention and two weeks after completion of the intervention
Method of measurement
Morris Child and Adolescent Self-Efficacy Questionnaire (2001)

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: Divergent thinking training sessions will be based on the educational protocol of Badri et al. 2013. The sessions of this intervention will be conducted in 12 90-minute sessions (one session per week) in a group for the experimental group. Divergent thinking training is an approach that aims to expand mental horizons, break rigid cognitive patterns, and improve the skills of generating new and diverse ideas. It helps female students solve their personal and academic problems by replacing stereotyped and convergent thought patterns with responses based on flexibility and intellectual originality, and pave the way for the promotion of creativity, self-confidence, and self-efficacy. This approach has main educational axes that lead to the improvement of the four dimensions of creative thinking (fluency, flexibility, originality, and expansion); These axes include: creating a safe cognitive space and explaining the concept of divergent versus convergent thinking, teaching individual and group brainstorming techniques without making quick judgments, strengthening the skill of mental fluidity through maximum production of ideas and unconventional applications for objects, strengthening mental flexibility by redefining problems and changing perspectives, teaching techniques for expanding ideas and paying attention to fine details, using analogy, metaphor, and SCAMPER techniques to foster innovation and originality in idea generation, identifying and modifying emotional and psychological barriers to creativity (such as fear of making mistakes and being judged by others) to promote self-efficacy beliefs and self-confidence, and finally implementing practical exercises in creative problem-solving and summarizing learned skills. The main emphasis of this training is to reduce the fear of negative evaluation, increase courage in presenting new ideas, and replace limiting mental patterns with beliefs of efficiency, intellectual independence, and self-confidence in facing learning challenges.
Category
Behavior

2

Description
Control group: They do not receive any intervention or treatment.
Category
N/A

Recruitment centers

1

Recruitment center
Name of recruitment center
Razieh Girls' High School
Full name of responsible person
Tahereh Norouzi
Street address
Fajr Alley, South Hafez Street.
City
Izeh
Province
Khouzestan
Postal code
6391646566
Phone
+98 61 4365 1210
Email
esmaeilinavid@gmail.com

Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Islamic Azad University
Full name of responsible person
Behrang Mohammad Salehi
Street address
Daneshjo Square, Zagros Blvd.
City
Izeh
Province

Khouzestan

Postal code
6391693627

Phone
+98 996 477 0611

Email
bsalehi@iau.ac.ir

Grant name

Grant code / Reference number

Is the source of funding the same sponsor organization/entity?
Yes

Title of funding source
Islamic Azad 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
Islamic Azad University

Full name of responsible person
Tahereh Norouzi

Position
Master's Student

Latest degree
Bachelor

Other areas of specialty/work
Psychology

Street address
No. 462, Shahid Aftab Alley, Mohammad Rasulollah Street

City
Izeh

Province
Khouzestan

Postal code
6391684386

Phone
+98 939 008 7375

Fax

Email
esmaeilinavid@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity
Islamic Azad University

Full name of responsible person
Tahereh Norouzi

Position
Master's Student

Latest degree
Bachelor

Other areas of specialty/work
Psychology

Street address
No. 462, Shahid Aftab Alley, Mohammad Rasulollah Street

City
Izeh

Province
Khouzestan

Postal code
6391684386

Phone
+98 939 008 7375

Fax

Email
esmaeilinavid@gmail.com

Person responsible for updating data

Contact

Name of organization / entity
Islamic Azad University

Full name of responsible person
Tahereh Norouzi

Position
Master's Student

Latest degree
Bachelor

Other areas of specialty/work
Psychology

Street address
No. 462, Shahid Aftab Alley, Mohammad Rasulollah Street

City
Izeh

Province
Khouzestan

Postal code
6391684386

Phone
+98 939 008 7375

Fax

Email
esmaeilinavid@gmail.com

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
Participant data is completely confidential and I do not intend to publish it.

Study Protocol
Undecided - It is not yet known if there will be a plan to make this available

Statistical Analysis Plan
No - There is not 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

No - There is not a plan to make this available

Data Dictionary

No - There is not a plan to make this available