Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

Investigating the Impact of Artificial Intelligence Education on Knowledge and AI Readiness in Medical Students

Protocol summary

Study aim

To evaluate the effect of pre-study materials and the practical assignment on the consolidation or reinforcement of learning. To examine the relationship between students' demographic and academic characteristics and the degree of change in knowledge and attitudes. To provide practical recommendations for integrating artificial intelligence education into the medical curriculum.

Design

A sample of 100 medical students from Baqiyatallah University of Medical Sciences will be randomly assigned to two groups of 50: a control group and an intervention group. A pre-test will then be administered using a standardized questionnaire to assess participants' readiness and knowledge. Randomization was performed using the website randomizer.org.

Settings and conduct

Baqiyatallah University of Medical Sciences

Participants/Inclusion and exclusion criteria

Medical students at various stages of training Willingness to participate in the study and signing the informed consent form No history of participation in similar advanced artificial intelligence training courses Absence from more than two sessions of the training course Failure to complete the pre-test or post-test questionnaires Withdrawal from the study at any stage

Intervention groups

In this study, an online educational intervention will be implemented for medical students to examine its effect on their awareness of and readiness for the application of artificial intelligence in medicine. First, students will complete the standardized MAIRS-MS questionnaire as a pre-test. Then, an intensive 180-minute online workshop (delivered in two 90-minute sessions) will be held.

Main outcome variables

Total Artificial Intelligence Readiness Score Total Artificial Intelligence Knowledge Score

General information

Reason for update

Acronym

IRCT registration information

IRCT registration number: **IRCT20260528069555N1**
Registration date: **2026-09-05, 1405/06/14**
Registration timing: **registered_while_recruiting**

Last update: **2026-09-05, 1405/06/14**
Update count: **0**

Registration date

2026-09-05, 1405/06/14

Registrant information

Name

Alireza Golestani

Name of organization / entity

Country

Iran (Islamic Republic of)

Phone

+98 922 954 8909

Email address

alirezagolestani7878@gmail.com

Recruitment status

Recruitment complete

Funding source

Expected recruitment start date

2026-08-23, 1405/06/01

Expected recruitment end date

2026-09-23, 1405/07/01

Actual recruitment start date

empty

Actual recruitment end date

empty

Trial completion date

empty

Scientific title

Investigating the Impact of Artificial Intelligence Education on Knowledge and AI Readiness in Medical Students

Public title
Investigating the Effect of Artificial Intelligence Training on Knowledge and Readiness for Medical Artificial Intelligence
Purpose
Education/Guidance
Inclusion/Exclusion criteria
Inclusion criteria:
Medical students in the Basic sciences, Physiopathology ,Extern , Intern, and residency phases. Lack of prior participation in similar training courses access to the internet and appropriate online equipment willingness to participate in the research signing the informed consent form are required
Exclusion criteria:
Presence of any acute or clinically unstable condition that may interfere with course completion Inability to communicate verbally or in writing in Persian Lack of a private and quiet space for attending online sessions
Age
No age limit
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **100**
Randomization (investigator's opinion)
Randomized
Randomization description
Participants were randomly assigned to either the intervention or control group using block randomization with a block size of four. The unit of randomization was the individual student. The randomization sequence was generated using computer software (SPSS version 27) by an independent statistician who was not involved in the recruitment or data collection process. To ensure allocation concealment, the generated allocation codes were placed in sequentially numbered, opaque, sealed envelopes. The envelopes were opened by a research assistant only after each participant had completed the baseline assessment (pretest). This procedure ensured that both the researchers and participants were blinded to group assignment until the moment of allocation.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Factorial
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
The Research Ethics Committee of Baqiyatullah University of Medical Sciences
Street address
Baqiyatallah Hospital, Molla Sadra St., Vanak, Tehran, Iran
City
Tehran
Province
Tehran
Postal code
1435814819
Approval date
2026-02-03, 1404/11/14
Ethics committee reference number
IR.BMSU.REC.1404.189

Health conditions studied

1

Description of health condition studied
Investigating the Impact of Artificial Intelligence Education on Knowledge and Medical AI Readiness
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
The questionnaire score of the Medical Artificial Intelligence Knowledge and Readiness Scale for medical students
Timepoint
At the beginning of the study and immediately after the study
Method of measurement
The Ghalibaf et al. Knowledge and Readiness Scale questionnaire

Secondary outcomes

empty

Intervention groups

1

Description
Intervention group: The intervention group (n = 50) participated in a 180-minute intensive online training workshop, delivered in two 90-minute sessions, covering the fundamentals of artificial intelligence, clinical applications, common tools, and ethical considerations as well as algorithmic bias. Forty-eight hours prior to the

workshop, a pre-study package, including a short educational video and a summary handout, was provided to this group. Immediately after the intervention, both the intervention and control groups completed the questionnaires again. During this period, the control group did not receive the workshop or the educational package.

Category

Other

2

Description

Control group: The control group participated in both the pre-test and post-test without receiving any intervention. Immediately after the educational workshop for the intervention group was completed, both groups completed the post-test questionnaire.

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Baqiyatallah Hospital

Full name of responsible person

Dr.Golestani

Street address

Baqiyatallah Hospital, Molla Sadra Street, Vanak, Tehran, Iran

City

Tehran

Province

Tehran

Postal code

1435814819

Phone

+98 922 954 8909

Email

alirezagolestani7878@gmail.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Bagheiat-allah University of Medical Sciences

Full name of responsible person

Dr.Khedmat

Street address

Baqiyatallah Hospital, Molla Sadra Street, Vanak, Tehran, Iran

City

Tehran

Province

Tehran

Postal code

1435814819

Phone

+98 912 387 3622

Email

alirezagolestani7878@gmail.com

Grant name

Grant code / Reference number

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

Yes

Title of funding source

Bagheiat-allah 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

Bagheiat-allah University of Medical Sciences

Full name of responsible person

Seyyed Alireza Golestani

Position

Medical Student

Latest degree

Medical doctor

Other areas of specialty/work

General Practitioner

Street address

Baqiyatallah Hospita،Mulla Sadra Street، Vanak،Tehran،Iran , , .

City

Tehran

Province

Tehran

Postal code

1435814819

Phone

+98 922 954 8909

Email

alirezagolestani7878@gmail.com

Person responsible for scientific inquiries

Contact

Name of organization / entity

Bagheiat-allah University of Medical Sciences

Full name of responsible person

Seyyed Alireza Golestani

Position

Medical Student

Latest degree

Medical doctor

Other areas of specialty/work
General Practitioner
Street address
Baqiyatallah Hospita،Mulla Sadra Street، Vanak،Tehran،Iran , , .
City
Tehran
Province
Tehran
Postal code
1435814819
Phone
+98 922 954 8909
Email
alirezagolestani7878@gmail.com

Person responsible for updating data

Contact
Name of organization / entity
Bagheiat-allah University of Medical Sciences
Full name of responsible person
Seyyed Alireza Golestani
Position
Medical Student
Latest degree
Medical doctor
Other areas of specialty/work
General Practitioner
Street address
Baqiyatallah Hospita،Mulla Sadra Street، Vanak،Tehran،Iran , , .
City
Tehran
Province
Tehran
Postal code
1435814819
Phone
+98 922 954 8909
Email
alirezagolestani7878@gmail.com

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
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
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