Clinical Trial Protocol
Iranian Registry of Clinical Trials

08 Nov 2026

The effect of Artificial Intelligence in Health training package on ethical awareness, attitude and anxiety about using artificial intelligence in intensive care unit nurses affiliated with Tehran University of Medical Sciences, 2025

Protocol summary

Study aim
Determining the Effect of an Artificial Intelligence Health Education Package on Ethical Awareness, Attitude, and Anxiety Regarding the Use of Artificial Intelligence Among Intensive Care Unit Nurses Affiliated with Tehran University of Medical Sciences, 2025

Design
This study was a quasi-experimental clinical trial with a control group, pretest-posttest design, parallel groups, non-blinded, with cluster-randomized allocation, a sample size of 136 nurses (68 per group), and four- and eight-week follow-ups, in which hospitals were allocated to intervention and control groups using a random number table.

Settings and conduct
The study setting comprised the intensive care units (ICUs) of hospitals affiliated with Tehran University of Medical Sciences. The selected hospitals included Imam Khomeini Hospital Complex, Sina Hospital, Shariati Hospital, Ziaian Hospital, and Baharloo Hospital. These facilities were designated as research settings following coordination with the Research Deputy of the School of Nursing and Midwifery and upon obtaining permission from the nursing administration of the respective hospitals.

Participants/Inclusion and exclusion criteria
Nurses working in the intensive care units of hospitals affiliated with Tehran University of Medical Sciences

Intervention groups
The intervention group received a five-session Artificial Intelligence in Health training package delivered via virtual education and microlearning methods, while the control group received no intervention during the study period.

Main outcome variables
Ethical Awareness Attitude Toward Artificial Intelligence Anxiety Regarding Artificial Intelligence Use

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20250128064547N2**
Registration date: **2026-08-28, 1405/06/06**
Registration timing: **registered_while_recruiting**

Last update: **2026-08-28, 1405/06/06**
Update count: **0**

Registration date
2026-08-28, 1405/06/06

Registrant information
Name
mahboobeh shali
Name of organization / entity
Country
Iran (Islamic Republic of)
Phone
+98 912 481 2923
Email address
mehraneshali@yahoo.com

Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2026-08-25, 1405/06/03
Expected recruitment end date
2026-10-25, 1405/08/03
Actual recruitment start date
empty

Actual recruitment end date
empty
Trial completion date
empty

Scientific title
The effect of Artificial Intelligence in Health training package on ethical awareness, attitude and anxiety about using artificial intelligence in intensive care unit nurses affiliated with Tehran University of Medical Sciences, 2025

Public title
The effect of Artificial Intelligence in Health training package on ethical awareness, attitude and anxiety about using artificial intelligence
Purpose
Health service research
Inclusion/Exclusion criteria
Inclusion criteria:
Participation in the study was contingent upon providing written informed consent. A minimum of a Bachelor's degree in nursing was required, as this level of education was considered necessary for comprehending artificial intelligence-related concepts. At least one year of clinical experience in an intensive care unit was mandated to ensure adequate familiarity with the critical care environment and its care processes. Nurses were required to be actively engaged in providing direct patient care in the ICU setting. Access to the internet and proficiency in using social media platforms were essential prerequisites, given the virtual nature of the educational intervention. Additionally, possession of an active contact number was necessary for study-related communications and for distributing session links.
Exclusion criteria:
Withdrawal from the study was permitted at any stage without any consequences for the participants. Absence from more than one training session was considered a criterion for exclusion, as missing multiple sessions could compromise the effectiveness of the intervention. In the event of a ward transfer or relocation to a non-intensive care unit during the study period, participants were to be excluded from the analysis. Extended leave or absence exceeding two weeks, which would impede timely completion of questionnaires at designated time points, also warranted exclusion. Furthermore, participation in similar educational programs with comparable artificial intelligence content during the study period was grounds for removal from the study.
Age
No age limit
Gender
Both

Phase
N/A
Groups that have been masked
No information
Sample size
Target sample size: **136**
Randomization (investigator's opinion)
Randomized
Randomization description
The researcher attended the nursing administration offices of the aforementioned hospitals and, after elucidating the study objectives and methodology, obtained the roster of nurses employed in the intensive care units. Subsequently, eligible nurses were selected from the sampling frame using a random number table. Following participant selection, the hospitals were allocated to intervention (Imam Khomeini and Sina hospitals) and control (Shariati, Ziaian, and Baharloo hospitals) groups via a simple lottery method.
Blinding (investigator's opinion)
Not blinded
Blinding description
Placebo
Not used
Assignment
Other
Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee
Name of ethics committee
کمیته اخلاق در پژوهش دانشکده پرستاری و مامایی و دانشکده توانبخشی دانشگاه علوم پزشکی تهران
Street address
Nosrat
City
Tehran
Province
Tehran
Postal code
1419733171
Approval date
2026-01-20, 1404/10/30
Ethics committee reference number
IR.TUMS.FNM.REC.1404.036

Health conditions studied

1

Description of health condition studied
Anxiety, ethical awareness, and attitude of intensive care unit nurses toward artificial intelligence
ICD-10 code
ICD-10 code description

Primary outcomes

1

Description
Three main variables including ethical awareness, attitude, and anxiety regarding artificial intelligence use

in intensive care unit nurses

Timepoint

Four time points: baseline, immediately post-intervention, four weeks, and eight weeks after the intervention

Method of measurement

Using three standardized questionnaires including Kim and Shin's Ethical Awareness Scale, Suh and Ahn's Attitude Scale, and Wang and Wang's Artificial Intelligence Anxiety Scale (AIAS)

Secondary outcomes

empty

Intervention groups

1

Description

Control group:

Category

N/A

Recruitment centers

1

Recruitment center

Name of recruitment center

Hospitals affiliated with Tehran University of Medical Sciences

Full name of responsible person

mahboubeh shali

Street address

nosrat

City

Tehran

Province

Tehran

Postal code

1419733171

Phone

+98 21 6692 7171

Email

mehraneshali@yahoo.com

Sponsors / Funding sources

1

Sponsor

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

محبوبه شالی

Street address

qods

City

Tehran

Province

Tehran

Postal code

1419733171

Phone

+98 21 6692 7171

Email

fnm@tums.ac.ir

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

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

Tehran University of Medical Sciences

Full name of responsible person

محبوبه شالی

Position

هییت علمی

Latest degree

Ph.D.

Other areas of specialty/work

Nursery

Street address

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City

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Phone

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Email

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Person responsible for scientific inquiries

Contact

Name of organization / entity

Tehran University of Medical Sciences

Full name of responsible person

mahboubeh shali

Position

faculty member

Latest degree

Ph.D.

Other areas of specialty/work

Nursery

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Person responsible for updating data

Contact

Name of organization / entity

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Full name of responsible person

mahboubeh shali

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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

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

Statistical Analysis Plan

Not applicable

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