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AI-assisted clinical decision-making training for pharmacology students

Submission date
23/06/2026

Recruitment status
No longer recruiting

Registration date
26/06/2026

Overall study status
Completed

Last Edited
26/06/2026

Condition category
Other

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[_] Results
[_] Individual participant data
[X] Record updated in last year

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Public, Scientific, Principal investigator

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Study information

Scientific Title
The Context-Feedback-Visibility (CFV) Framework: mechanisms of AI-empowered clinical decision-making training in pharmacology education

Acronym
CFV

Study objectives

This study aims to (1) empirically test whether an AI-empowered work logic restructuring model can strengthen clinical decision-making competence in pharmacology education, and (2) identify the underlying mechanisms through which AI and curriculum logic coupling produces its effects.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 25/05/2024, Institutional Ethics Committee of Tongren Polytechnic College (School of Pharmacy, Tongren Polytechnic College, No. 2, Ziyou Road, Bijiang District, Tongren, 554300, China; +86-856-6909046; Not provided at time of registration), ref: Not provided at time of registration

Primary study design
Interventional

Allocation
Non-randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Treatment

Study type(s)

Health condition(s) or problem(s) studied
Clinical decision-making competence in pharmacology education

Interventions
The study employed a four-group quasi-experimental design over two consecutive semesters.

Full Intervention group (n=42): Received a restructured pharmacology curriculum organized around typical medication tasks, supported by four AI technology components (virtual simulation medication decision-making system, intelligent case generator, pharmacology knowledge graph, and natural language interaction module).

AI-Only group (n=40): Used identical AI tools but continued with a traditional drug-classification-based curriculum.

Curriculum-Only group (n=41): Received the restructured curriculum without AI support.

Traditional Instruction group (n=41): Received standard case-based lectures with no AI tools or curriculum restructuring.

Intervention Type
Behavioural

Primary outcome(s)
1. Knowledge application ability measured using a standardized case analysis examination containing 10 comprehensive cases, each requiring multi-step medication decision-making, scored by two pharmacology instructors blinded to group assignment, at pre-intervention (Week 0), mid-term (Week 16), end-of-term (Week 32)

Key secondary outcome(s)

Completion date
15/07/2025

Eligibility

Key inclusion criteria
1. Second-year pharmacy students enrolled in a pharmacology course at Tongren Polytechnic College
2. All participants provided informed consent

Healthy volunteers allowed
Yes

Age group
Adult

Lower age limit
18 Years

Upper age limit
22 Years

Sex
All

Total final enrolment
164

Key exclusion criteria
Students who did not complete the pre-intervention baseline assessments

Date of first enrolment
01/09/2024

Date of final enrolment
01/09/2024

Locations

Countries of recruitment
China

Sponsor information

Organisation
Tongren Polytechnic College

Funder(s)

Funder type

Funder Name
Tongren Polytechnic College

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available