Clinical Trial Protocol
Iranian Registry of Clinical Trials

09 Nov 2026

Investigating the effect of training based on the escape room game on team management of cardiopulmonary resuscitation in nursing students

Protocol summary

Study aim
Determining the effect of escape room game-based training on cardiopulmonary resuscitation team management in nursing students

Design
This study is a randomized controlled trial (RCT) with parallel intervention and control groups (n=47 in each group) and double-blinded. Random allocation will be done online.

Settings and conduct
This study is conducted in the Faculty of Nursing and Midwifery, Shahid Sadoughi University of Medical Sciences, Yazd. The study is double-blind. Participants and evaluators are unaware of grouping (intervention or control). The students of two groups are divided into teams of 6 people and participate in the pre-test of team objective structured clinical examination (TOSCE) of CPR. Then both groups participate in the CPR training course. At the end, they complete a knowledge test. For the intervention group, a team-based CPR escape room game will be performed. After one month, two groups complete the TOSCE post-test.

Participants/Inclusion and exclusion criteria
Inclusion criteria include nursing students from the 6th to 8th semesters, willingness to participate, and the history of passing the emergency nursing course. Non-inclusion criteria include students who are on leave or sick, who have a diploma in practical nursing, and who have a history of participating in cardiopulmonary resuscitation courses in external institutions.

Intervention groups
For the students of the intervention group, based on the content of the advanced cardiopulmonary resuscitation course and team performance the escape room game is designed. Students in groups of 6 enter the faculty's skill lab unit. They must be able to solve scientific puzzles within a certain time to find the key to the room and leave the room. The escape room game will be held for the control group after the completion of the study.

Main outcome variables
TOSCE scores; Knowledge scores and satisfaction scores

General information

Reason for update
Acronym
IRCT registration information
IRCT registration number: **IRCT20240815062770N1**
Registration date: **2024-10-16, 1403/07/25**
Registration timing: **prospective**

Last update: **2024-10-16, 1403/07/25**
Update count: **0**

Registration date
2024-10-16, 1403/07/25

Registrant information
Name
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Name of organization / entity
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Recruitment status
Recruitment complete
Funding source

Expected recruitment start date
2024-11-21, 1403/09/01
Expected recruitment end date
2025-05-22, 1404/03/01
Actual recruitment start date
empty
Actual recruitment end date
empty

Trial completion date
empty

Scientific title
Investigating the effect of training based on the escape room game on team management of cardiopulmonary resuscitation in nursing students

Public title
The effect of the escape room game on nursing students' team management in CPR

Purpose
Education/Guidance

Inclusion/Exclusion criteria

Inclusion criteria:
Willingness to participate in the study Passing the nursing course of emergencies

Exclusion criteria:
Students who are on leave or sick Students with diploma in practical nursing Experience of participating in advanced cardiopulmonary resuscitation courses in external institutions

Age
No age limit

Gender
Both

Phase
3

Groups that have been masked

- Participant
- Outcome assessor

Sample size
Target sample size: **94**

Randomization (investigator's opinion)
Randomized

Randomization description
To prevent contact between the two groups of the study, individuals who met the inclusion criteria will be selected using the purposeful sampling method. Then, based on the inclusion criteria using the online software (using the website www.random.org/sequences/), the allocation of people into two groups (47 individuals in each group) will be done. Based on the prepared list, in the number of 94 envelopes, the sequence of individuals' entrance to the groups will be determined and the envelopes will be closed. Only the names of the individuals are placed on the envelopes, but it is not clear to the researcher and the participants (before opening) which group they belong to. After receiving the envelope by the student and opening it, the student announces the name of his/her group to the researcher and is included in the intervention or control group list.

Blinding (investigator's opinion)
Double blinded

Blinding description
The research was conducted using a double-blind approach. In this way, the participants are unaware of which group they have been assigned to. To blind the students at the time of allocation to groups, they will be only informed that they are in group one or two (they were informed about the nature of the research and the opportunity to be in the intervention or control groups in the informed consent form). Also, the evaluator team for the pre-test and post-test will not know which group the students are in (intervention or control).

Placebo
Not used

Assignment
Single

Other design features

Secondary Ids

empty

Ethics committees

1

Ethics committee

Name of ethics committee
Research Ethics Committee of Shahid Sadougi University of Medical Sciences

Street address
Imam Reza Complex, Research and Technical Assistant, Imam Hossein Square, Yazd

City
Yazd

Province
Yazd

Postal code
8916877443

Approval date
2024-09-11, 1403/06/21

Ethics committee reference number
IR.SSU.REC.1403.068

Health conditions studied

1

Description of health condition studied
Advanced cardiopulmonary resuscitation

ICD-10 code

ICD-10 code description

Primary outcomes

1

Description
Team performance scores on the Team Clinical Objective Structured Examination (TOSCE).

Timepoint
Before the intervention as a pre-test and also one month after the implementation of the escape room game based on advanced and team CPR as post-test

Method of measurement
TOSCE exam checklists

Secondary outcomes

1

Description
Satisfaction of the entire course
Timepoint
Before doing the TOSCE post-test
Method of measurement
Satisfaction questionnaire (is researcher-made and will be evaluated based on psychometry required items)

Intervention groups

1

Description
Intervention group: Students of the intervention group first participate in the advanced cardiopulmonary resuscitation training course with an emphasis on team management and the role of team members. Then in less than a week, for the students of the intervention group, based on the content of the advanced cardiopulmonary resuscitation course and team performance and the importance of the role of team members, the escape room game will be implemented. Students in groups of 6 enter the faculty's skill lab unit. They must be able to solve scientific puzzles within a certain time to find the key to the room and leave the room. The puzzles of this room include knowing the resuscitation equipment, learning how to work with the electroshock device and performing a complete cardiac resuscitation operation based on the scenario defined based on the roles of each person in the resuscitation. All actions are designed based on the gamification rules in medical education.
Category
Other

2

Description
Control group: Similar to the intervention group, this group participates in the advanced cardiopulmonary resuscitation training course with an emphasis on team management and the role of team members. After completing the TOSCE post-test, the escape room game will also be held for this group.
Category
Other

Recruitment centers

1

Recruitment center
Name of recruitment center
School of Nursing and Midwifery, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
Full name of responsible person
Fatemeh Bakhshi
Street address
Bouali Ave., Safaeyeh, Yazd, Iran.
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Sponsors / Funding sources

1

Sponsor
Name of organization / entity
Yazd University of Medical Sciences
Full name of responsible person
Amin Salehi Abarghoee
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Imam Reza Complex, Research and Technical Assistant, Imam Hossein Square, Yazd
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emika9807@gmail.com
Grant name
Grant code / Reference number
Is the source of funding the same sponsor organization/entity?
Yes
Title of funding source
Yazd 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
Yazd University of Medical Sciences
Full name of responsible person
Fatemeh Bakhshi
Position
Assistant professor
Latest degree
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Sharing plan

Deidentified Individual Participant Data Set (IPD)
Yes - There is a plan to make this available
Study Protocol
Yes - There is a plan to make this available
Statistical Analysis Plan
Not applicable
Informed Consent Form
Yes - There is a plan to make this available
Clinical Study Report
Yes - There is a plan to make this available
Analytic Code
Yes - There is a plan to make this available
Data Dictionary
Undecided - It is not yet known if there will be a plan to make this available
Title and more details about the data/document
All the personal data of the participants in the study can be shared after de-identifying them. The sharing of data is done in the form of uploading in the official data sharing database following the request of the applicant in the form of an email to the responsible author's email.
When the data will become available and for how long
6 months after the publication of the articleلد
To whom data/document is available
The data will be available to researchers working in academic and scientific institutions
Under which criteria data/document could be used
For scientific application and use for systematic review studies
From where data/document is obtainable
Fatemeh Bakhshi, Yazd, Bu Ali St., Safaiyeh, Shahid Sadoughi School of Nursing and Midwifery, Yazd Nursing and Midwifery Care Research Center, Postal Code: 8916877443, Phone: 00989139684626, Email Address: fatemebakhshii@gmail.com f.bakhshi@gmail.com
What processes are involved for a request to access data/document
A week after the applicant's email
Comments