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From knowledge to safe practice: comparing face-to-face and microlearning-based e-learning for patient transfer training in emergency medical services

Submission date
12/09/2026

Recruitment status
No longer recruiting

Registration date
22/09/2026

Overall study status
Completed

Last Edited
22/09/2026

Condition category
Other

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

Plain English summary of protocol

Background and study aims

Emergency medical services (EMS) personnel frequently care for injured patients who need to be moved safely before reaching hospital. Training in patient transfer and prehospital trauma care is therefore an important part of their role. Traditionally, this training is delivered face to face, but newer approaches such as microlearning use short online lessons that may be more flexible and accessible. The aim of this study is to compare face-to-face education with microlearning-based e-learning and determine which method is more effective at improving knowledge, clinical skills and learner satisfaction among EMS personnel.

Who can participate?

EMS personnel working in Malayer County, Iran, aged 22 to 50 years, who hold a bachelor's degree in a medical sciences subject and agree to take part in the study.

What does the study involve?

Participants are randomly assigned to one of two groups. One group receives face-to-face training delivered in five 45-minute sessions that include teaching, discussion and practical exercises. The other group receives the same educational content through 15 short online microlearning sessions delivered as videos. Both groups also complete practical training using simulation equipment. Researchers assess participants' knowledge and clinical skills before and after training and ask them to complete a questionnaire about their satisfaction with the educational programme. The results are then compared between the two groups.

What are the possible benefits and risks of participating?

Participants may improve their knowledge and practical skills in patient transfer and prehospital trauma care. The study may also help identify effective and flexible training methods for EMS personnel. No significant risks are expected, although participants must give time to complete the training and questionnaires.

Where is the study run from?
Shiraz University of Medical Sciences, Iran.

When is the study starting and how long is it expected to run for?
July 2024 to December 2024.

Who is funding the study?
Shiraz University of Medical Sciences</Funder Name>, Iran.

Who is the main contact?
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Contact information

Type(s)
Scientific, Public, Principal investigator

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Study information

Scientific Title
Comparison of face-to-face and microlearning-based e-learning for patient transfer training among emergency medical services personnel: a two-group pretest–posttest study

Study objectives
To compare face-to-face education with microlearning-based e-learning in terms of their effects on knowledge, clinical skills, and course satisfaction among emergency medical services personnel receiving prehospital trauma care training.

Ethics approval required
Ethics approval required

Ethics approval(s)

Approved 09/08/2024, Shiraz University of Medical Sciences Ethics Committee (IR.SUMS.REC.1403.231, Shiraz, 7134814336, Iran; 987132300037; z_karimian_z@yahoo.com), ref: IR.SUMS.REC.1403.231

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Blinded (masking used)

Control
Dose comparison

Assignment
Sequential

Purpose
Health services research

Study type(s)

Health condition(s) or problem(s) studied
Patient transfer and prehospital trauma care

Interventions
Sampling and randomisation procedure
The list of eligible personnel was obtained from the Emergency Medical Services (EMS) Center in Malayer County. Each eligible participant was assigned a unique identification number. Participants were then randomly allocated to the two study groups using a simple lottery-based randomisation procedure. Participant numbers were randomly drawn and allocated equally between the groups, with 41 participants initially assigned to each group. One participant from each group subsequently withdrew from the study, resulting in 40 participants per group in the final analysis.

Face-to-face education
Participants received face-to-face patient transfer and prehospital trauma care training in five 45-minute sessions. Each session included approximately 30 minutes of instructor-led teaching and 15 minutes of question-and-answer and discussion. The training used PowerPoint presentations, images, demonstrations, practical activities, and hands-on practice in a simulation /manikin setting.

Intervention 2 — Microlearning-based e-learning
Participants received the same educational content and learning objectives through 15 electronic microlearning sessions, each lasting approximately 10–15 minutes. The sessions were developed using iSpring software and delivered as MP4 videos through a dedicated group on the Bale platform. The intervention also included practical activities and hands-on practice in a simulation/manikin setting.

Intervention Type
Behavioural

Primary outcome(s)
1. Knowledge of patient transfer and prehospital trauma care measured using a 20-item multiple-choice questionnaire, at before and after the educational intervention

2. 2. Clinical skills related to patient transfer and prehospital trauma care measured using a standardized clinical skills checklist covering nine skill domains, at before and after the educational intervention

Key secondary outcome(s)
1. Participants' satisfaction with the educational intervention measured using an 18-item questionnaire covering four dimensions: scientific content, content organization, active learning, and flexibility, at after the intervention

Completion date
01/12/2024

Eligibility

Key inclusion criteria
Emergency medical services personnel working in Malayer County who held a bachelor's degree in a medical sciences field and provided informed consent to participate in the study.

Healthy volunteers allowed
Yes

Age group
Adult

Lower age limit
22 Years

Upper age limit
50 Years

Sex
Male

Total final enrolment
78

Key exclusion criteria
Participants who withdrew from the study or failed to complete at least 80% of the study questionnaire were excluded from the analysis.

Date of first enrolment
01/07/2024

Date of final enrolment
01/12/2024

Locations

Countries of recruitment
Iran

Sponsor information

Organisation
Shiraz University of Medical Sciences

ROR
https://ror.org/01n3s4692

Funder(s)

Funder type

Funder Name
Shiraz University of Medical Sciences

Alternative Name(s)
SUMS

Funding Body Type
Government organisation

Funding Body Subtype
Local government

Location
Iran

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Other files			22/09/2026	No	No