

Comparing simulation-based workshops and virtual lectures for disaster preparedness training during the Hajj

Submission date 05/10/2026	Recruitment status No longer recruiting	☐ Prospectively registered ☐ Protocol
Registration date 20/10/2026	Overall study status Completed	☐ Statistical analysis plan ☐ Results
Last Edited 19/10/2026	Condition category Other	☐ Individual participant data ☒ Record updated in last year

Plain English summary of protocol

Background and study aims

Healthcare workers need to be ready to respond safely and effectively to disasters and other emergencies. This is especially important during the Hajj, when very large numbers of people gather in one area. Training can be provided in different ways, including practical simulation exercises and online teaching.

This study compared two ways of teaching healthcare trainees about disaster management during the Hajj. One group took part in a practical, simulation-based workshop, while another group attended a virtual lecture. The researchers wanted to find out how well each method improved participants' knowledge of disaster management and their confidence in responding to disasters

Who can participate?

Healthcare students and residents aged 18 to 65 years who were taking part in the disaster management education programme could participate. They needed to be eligible for either the simulation-based workshop or the virtual lecture, agree to take part and provide written informed consent, and be able to complete assessments before and after the training

What does the study involve?

A total of 180 participants took part in the study. Participants received one of two types of disaster preparedness training

One group attended simulation-based disaster management workshops on 28 and 30 January 2021. These workshops used realistic disaster scenarios to give participants practical experience of responding to and managing disasters. The scenarios were followed by structured discussions in which participants could review and discuss what had happened

The other group attended a virtual lecture about disaster management on 23 February 2021. Before and immediately after the training, participants completed a short questionnaire to assess their knowledge of disaster management and an assessment of their confidence in managing disasters. Participants also completed a questionnaire about their experience of the training immediately afterwards. Those who took part in the simulation training were also asked about the quality of the discussion and feedback that followed the simulation

What are the possible benefits and risks of participating?

Participants may have improved their knowledge of disaster management and their confidence in responding to emergencies. The training may also have helped prepare them for responding to disasters during the Hajj

The study record does not describe any specific risks or disadvantages of taking part

Where is the study run from?

The study was carried out in Saudi Arabia and was associated with King Abdullah International Medical Research Center

When is the study starting and how long is it expected to run for?

January 2021 to February 2021.

Who is funding the study?

The study was funded by King Abdullah International Medical Research Center in Saudi Arabia

Who is the main contact?

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Contact information

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Study information

Scientific Title

Effectiveness of simulation-based disaster management training in enhancing response skills during the Hajj mass gathering: an experimental study

Study objectives

To compare the effectiveness of a simulation-based workshop and a virtual lecture in improving disaster management knowledge and self-confidence among healthcare trainees preparing for disaster response during the Hajj mass gathering.

Ethics approval required

Ethics approval required

Ethics approval(s)

Approved 07/09/2020, King Abdullah International Medical Research Center (KAIMRC) (awwad alqabdi 9048, Jeddah, 23345, Saudi Arabia; +966 12 224 6660; ROAdmin@kaimrc.edu.sa), ref: RJ20/136/J

Primary study design

Interventional

Allocation

Non-randomized controlled trial

Masking

Open (masking not used)

Control

Active

Assignment

Parallel

Purpose

Educational intervention / disaster preparedness training

Study type(s)

Health condition(s) or problem(s) studied

Disaster preparedness and emergency response among healthcare trainees during the Hajj mass gathering

Interventions

Participants received one of two educational interventions for disaster preparedness during the Hajj mass gathering. The intervention group participated in simulation-based disaster management workshops conducted on 28 and 30 January 2021. The workshops used immersive disaster scenarios to provide experiential training in disaster response and management, followed by structured discussion and debriefing. The comparison group received a virtual lecture on disaster management on 23 February 2021. Knowledge and self-confidence were assessed before and after the educational interventions to compare changes within and between the two groups.

Intervention Type

Other

Primary outcome(s)

1. Disaster management knowledge measured using total score on the five-item disaster management knowledge questionnaire at Immediately before and immediately after the educational intervention

Key secondary outcome(s)

1. Self-confidence in disaster management measured using total score on the three-item self-confidence assessment adapted from the Self-Confidence in Learning subscale of the Student Satisfaction and Self-Confidence in Learning instrument at immediately before and immediately after the educational intervention

2. Student evaluation of the learning experience measured using total score on the 11-item student evaluation questionnaire assessing participants' perceptions of the learning experience at immediately after the educational intervention

3. Perceived quality of debriefing measured using total score on the Student Version of the Debriefing Assessment for Simulation in Healthcare (DASH) at immediately after the educational intervention

Completion date

23/02/2021

Eligibility

Key inclusion criteria

1. Healthcare students and residents participating in the disaster management educational program
2. Eligible to participate in either the simulation-based workshop or virtual lecture
3. Willing to participate in the study and provide written informed consent
4. Able to complete the pre- and post-intervention assessments

Healthy volunteers allowed

Yes

Age group

Mixed

Lower age limit

18 Years

Upper age limit

65 Years

Sex

All

Total final enrolment

180

Key exclusion criteria

1. Individuals who provided no informed consent
2. Did not complete the educational intervention
3. Had incomplete pre- or post-intervention assessments

Date of first enrolment

28/01/2021

Date of final enrolment

23/02/2021

Locations

Countries of recruitment

Saudi Arabia

Sponsor information

Organisation

King Abdullah International Medical Research Center

ROR

<https://ror.org/009p8zv69>

Funder(s)

Funder type

Funder Name

Investigator initiated and funded

Alternative Name(s)

KAIMRC

Funding Body Type

Private sector organisation

Funding Body Subtype

Other non-profit organizations

Location

Saudi Arabia

Results and Publications

Individual participant data (IPD) sharing plan**IPD sharing plan summary**

Not expected to be made available