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Comparing training of final year Saudi nursing students in advanced heart-focused life support using a remote simulation and a traditional mannequin demonstration

Submission date
16/08/2021

Recruitment status
No longer recruiting

Registration date
07/09/2021

Overall study status
Completed

Last Edited
14/04/2023

Condition category
Other

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol
Background and study aims
Every year, 17 million individuals die as a result of cardiovascular disease (CVD). This figure is expected to grow to 23.6 million by 2030. Nurses must be well-versed in cardiopulmonary resuscitation (CPR). The World Health Organization and Sigma Theta Tau International have developed worldwide standards for midwives and nurses' first aid training. Previous studies have shown that technology may be utilized to make learning more interesting and valuable.

The aim of this study is to investigate the effectiveness of High Fidelity Simulation (HFS) on final-year undergraduate Saudi nurses' knowledge, skills performance acquisition, retention, and self-efficacy with regard to Advanced Cardiac Life Support (ACLS) in Saudi Arabia.

Who can participate?
Saudi final year undergraduate nursing students.

What does the study involve?
Participants in this study will be allocated into one of two groups, with an equal chance of being in either group (like tossing a coin). The groups will receive one of two different teaching methods, High Fidelity Simulation (HFS) or a PowerPoint presentation and demonstration on a static mannequin. Both groups be assessed using the knowledge written-exam test, skill performance test using a checklist tool, and self-efficacy evaluation using The Resuscitation Self-efficacy Scale.

A sample of the participants will also be invited to take part in semi-structured interviews about their experience of the training. The participants who did not recieve teaching using High Fidelity Simulation (HFS) will be offered the option of participating in the HFS teaching following the study's conclusion.

What are the possible benefits and risks of participating?
By participating in the study, participants will be able to reflect on their nursing abilities and knowledge. If they successfully complete all parts of the study, the researcher will offer them comments identifying their strengths and shortcomings, which will aid them throughout their learning journey. In addition, participants will gain exposure to a novel teaching technique, such as high-fidelity simulation.

Where is the study run from?
Taif University (Saudi Arabia)

When is the study starting and how long is it expected to run for?
From September 2020 to March 2022

Who is funding the study?
Taif University (Saudi Arabia)

Who is the main contact?
1. Mr Abdullah Alshehri, s1671948@ed.ac.uk
2. Prof Aisha Holloway (Principal supervisor), aisha.holloway@ed.ac.uk

Contact information

Type(s)
Scientific

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Additional identifiers

Study information

Scientific Title
Final year undergraduate Saudi Nursing students' self-efficacy towards High-Fidelity Simulation and Its relationship with knowledge and skill performance acquisition and retention of Advanced Cardiac Life Support (HFSACLS): a pilot feasibility study

Acronym
HFSACLS

Study objectives
1. At three different time periods, the result of final-year undergraduate nursing students will show no statistically significant differences in knowledge acquisition and retention scores (measured by Taif University school of nursing written exam) between those who received the HFS intervention and those who received only a PowerPoint presentation and a demonstration on a static mannequin.
2. The pre and post-test results of final-year undergraduate nursing students will show no statistically significant differences in psychomotor skills performance acquisition and retention scores (measured by the performance evaluation tool, which developed by the school of nursing at Taif University) between those who received the HFS intervention and those who received only a PowerPoint presentation and a demonstration on a static mannequin.
3. The pre and post-test results of the self-efficacy scores (measured by the Resuscitation Self-efficacy Scale) will not be statistically significantly different between the students who received the HFS intervention and those who received only a PowerPoint presentation demonstration on a static mannequin.

Ethics approval required
Old ethics approval format

Ethics approval(s)
1. Approved 20/10/2020, The University of Edinburgh Research Ethics Committee (Medical School, Doorway 6, Teviot Place, Edinburgh, EH8 9AG, UK; +44 (0)131 651 3969; hiss.ethics@ed.ac.uk), ref: NURS055
2. Approved 07/12/2020, Taif University Research Ethics Committee (Airport Main Road, Al Hawiyah, Taif, 2657, Saudi Arabia; +966 (0) 12 727 2020; ethics.committee@tu.edu.sa), ref: 42-016

Study design
Single-center single-blinded pilot randomized controlled trial with a qualitative interview substudy

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Advanced cardiac life support teaching for nursing students

Interventions
Participants will be randomised at a ratio of approximately 1:1 using computerised Brandon allocation. The intervention group will receive training using high fidelity simulation an innovative teaching method for advanced cardiac life support (ACLS) one day after the knowledge written exam and at 12 weeks follow up. The control group will receive a traditional teaching method for advanced cardiac life support (ACLS) using PowerPoint presentations and demonstrations on a static mannequin one day after the knowledge written exam and at 12 weeks follow up. Both teaching methods will be delivered to students in groups of 4.

A sample of the participants will also be invited to take part in a qualitative study using semi-structured interviews to ask about their experiences of the high fidelity simulation training method. The participants in the control group will be offered the option of participating in the high fidelity simulation teaching following the study's conclusion.

Intervention Type
Behavioural

Primary outcome(s)
Skill performance is measured using the Performance Evaluation tool developed by the nursing school at Taif University at baseline and 3 months

Key secondary outcome(s))
1. Knowledge measured using 20 multiple-choice questions set by The Taif University (nursing school curriculum) at baseline, 1 week, and 3 months
2. Self-efficacy measured using The Resuscitation Self-efficacy Scale at baseline and 3 months

Completion date
31/03/2022

Eligibility

Key inclusion criteria
1. Saudi Arabian nursing students in the final year of their undergraduate nursing programme
2. Agree to participate in the study
3. Have not previously studied an Advanced Cardiac Life Support (ACLS) or Basic Life Support (BLS) course

Participant type(s)
Health professional

Healthy volunteers allowed

No

Age group
Adult

Sex
All

Total final enrolment
28

Key exclusion criteria
1. Unwilling to participate in the study
2. Already certified with Advanced Cardiac Life Support (ACLS) or Basic Life Support (BLS) licences
3. Students bridging their degree to Bachelor of Science in Nursing (BSN) with previous clinical experiences

Date of first enrolment
21/10/2020

Date of final enrolment
04/02/2022

Locations

Countries of recruitment
Saudi Arabia

Study participating centre
Simulation and Medical Training Centre, Taif University
Medical School
Taif University
Al Hawiyah
Airport Main Road
Taif
Saudi Arabia
26571

Sponsor information

Organisation
Royal Embassy of Saudi Arabia Cultural Bureau in London, Taif University

Funder(s)

Funder type
University/education

Funder Name
Taif University

Alternative Name(s)
TU

Funding Body Type
Government organisation

Funding Body Subtype
Local government

Location
Saudi Arabia

Results and Publications

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are/will be available upon request from Abdullah Alshehri (s1671948@ed.ac.uk, and alshehri.a.a.s@gmail.com). After de-identification, all data acquired on individual participants during the trial will be made available. Consent from participants was obtained for data sharing. The study protocol, statistical analysis plan and analytic code will also be available. Data will become available beginning 9 months after thefollowing the submission of the PhD thesis, receiving of the PhD student's degree, and article's publication, and concluding 36 months afterwards. Proposals should be addressed to the investigator-in-chief. Data requestors must sign a data access agreement in order to receive access. Data will be shared with researchers who submit a proposal that adheres to accepted methodologies to accomplish the objectives outlined in the approved proposal.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Basic results			14/04/2023	No	No