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Are virtual surgical classrooms as good as face-to-face teaching for basic surgical skills training?

Submission date
15/04/2021

Recruitment status
No longer recruiting

Registration date
23/04/2021

Overall study status
Completed

Last Edited
03/05/2024

Condition category
Other

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

Plain English summary of protocol
Background and study aims
Virtual classroom training (VCT) is a novel educational method that permits accessible, distanced interactive expert instruction and may improve proficiency of basic surgical skills. We tested the combined hypothesis that virtual classroom training (VCT) is superior to computer-based learning (CBL) and non-inferior to face-to-face training (FFT) for basic surgical skills acquisition.

Who can participate?
Current medical students at London Universities with access to a personal computer and smartphone.

What does the study involve?
Interventions consisted of 90-minute training sessions. VCT was delivered via the BARCO weConnect platform, FFT was provided in-person by expert instructors and CBL was carried out independently.

What are the possible benefits and risks of participating?
Benefits: Improve surgical skills
Risks: Needlestick injury

Where is the study run from?
University College London (UK)

When is the study starting and how long is it expected to run for?
October 2020 to May 2021

Who is funding the study?
University College London and Royal College of Surgeons (UK)

Who is the main contact?
Dr Arjun Nathan, arjun.nathan.11@ucl.ac.uk

Contact information

Type(s)
Scientific

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Additional identifiers

Clinical Trials Information System (CTIS)
Nil known

ClinicalTrials.gov (NCT)
Nil known

Protocol serial number
19071/001

Study information

Scientific Title
Virtual interactive surgical skills classroom: a parallel-group, non-inferiority, adjudicator-blinded, randomised controlled trial

Acronym
VIRTUAL

Study objectives
The researchers tested the combined hypothesis that virtual classroom training (VCT) is superior to computer-based learning (CBL) and non-inferior to face-to-face training (FFT) for basic surgical skills acquisition.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 27/11/2020, University College London Research Ethics Committee (University College London, 2 Taviton Street, London, WC1H 0BT, UK; no telephone number provided; ethics@ucl.ac.uk), ref: 19071/001

Study design
Parallel-group non-inferiority prospective randomized controlled trial

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
Surgical skills education

Interventions
Participants will be stratified by subjective and objective suturing experience level and allocated to three intervention groups with a 1:1:1 ratio. The interventions will consist of 90-minute training sessions. Virtual classroom training will be delivered via the BARCO weConnect platform, face-to-face training will be provided in-person by expert instructors and computer-based learning carried out independently. Optimal student-to-teacher ratios of 12:1 for VCT and 4:1 for FFT will be used. The assessed task will be interrupted suturing with hand-tied knots.

Intervention Type
Behavioural

Primary outcome(s)
Proficiency in placing interrupted sutures with hand tied knots. Measured using the Objective Structured Assessment of Technical Skills (OSAT) score post-intervention, adjudicated by two experts and adjusted for baseline proficiency. The OSAT is employed by the Royal College of Surgeons for accredited course assessment. The primary outcome was measured twice during the trial, once immediately pre-intervention and once immediately post-intervention.

Key secondary outcome(s))
Measured using questionnaires. All questionnaires were created specifically for this trial:
1. Subjective suturing and knot tying confidence measured pre- and post-intervention
2. Perceptions of intervention quality measured immediately post-intervention
3. Financial expenses associated with session attendance self-reported in British Pound sterling (GBP) immediately post-intervention
4. Confidence and perceptions assessed by five-point Likert scale questions immediately post-intervention

Completion date
10/05/2021

Eligibility

Key inclusion criteria
Current medical students at London Universities with access to a personal computer and smartphone

Participant type(s)
Learner/student

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Total final enrolment
72

Key exclusion criteria
Does not meet inclusion criteria

Date of first enrolment
28/11/2020

Date of final enrolment
12/12/2020

Locations

Countries of recruitment
United Kingdom

England

Study participating centre
University College London
London
United Kingdom
WC1E 6BT

Sponsor information

Organisation
University College London

ROR
https://ror.org/02jx3x895

Funder(s)

Funder type

Charity

Funder Name
Royal College of Surgeons of England

Alternative Name(s)
RCS England, RCS ENG, The Royal College of Surgeons of England, RCS

Funding Body Type
Private sector organisation

Funding Body Subtype
Universities (academic only)

Location
United Kingdom

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 Arjun Nathan (arjun.nathan.11@ucl.ac.uk) from dates 1/4/21 to 1/7/22, for review of analyses only not for further analyses. This was agreed with consent from participants. All data is anonymised.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		29/11/2021	12/08/2022	Yes	No
Protocol article		22/07/2021	23/07/2021	Yes	No
Participant information sheet		22/07/2021	03/05/2024	No	Yes