ISRCTN12735607 https://doi.org/10.1186/ISRCTN12735607

Exploring the role of virtual reality in midwifery education: a prospective study

Submission date
30/11/2020

Recruitment status
No longer recruiting

Registration date
02/12/2020

Overall study status
Completed

Last Edited
01/12/2020

Condition category
Pregnancy and Childbirth

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

Plain English summary of protocol

Background and study aims
This research project is investigating the use of virtual reality and how these techniques may help to enhance learning in midwifery education. Research has shown that virtual reality can help with the learning process. Virtual reality enables the students to discover and explore their own knowledge, learn by doing, develop creativity, aid visual learners, and increase understanding of invisible concepts. This is unique to topics found within midwifery education. The main aim of this study is to find out whether virtual reality can provide an enhanced learning experience for students studying midwifery.

Who can participate?
Students studying midwifery in both the undergraduate and graduate entry programmes

What does the study involve?
Participation will involve a tutorial with a virtual reality headset, where the participant will undergo a lesson in 3D on the topic of fetal lie, position, and presentation of the fetus in pregnancy. It will be a learning experience that will last about 15 minutes. The researchers will provide instructions on the use of the VR headsets and a debriefing session will be held after the learning experience. The evaluation will consist of tests before and after the learning experience and a questionnaire to collect participants' opinions and attitudes on the use of this technology for learning purposes.

What are the possible benefits and risks of participating?
There is a learning opportunity for the participant to see fetal anatomy in 3D, topics pertaining to the third trimester of pregnancy and birth, complementing the teaching given in modules at University College Dublin. There are no known potential risks or harm involved with the study, but a potential risk to participants is cybersickness which can be defined as a range of clinical symptoms related to exposure to virtual reality. The researchers aim to minimise this risk by setting a limit of a maximum of 15 minutes when they are using virtual reality technology. If participants have any medical problems such as epilepsy, pre-existing binocular vision disturbances or psychiatric disorders, or suffer from a heart condition or other serious medical conditions, they will not be permitted to participate in the study as this is a safety precaution advised by the manufacturers. Before taking part in the study each participant will be screened

for any medical conditions as mentioned above, if a participant has any of the conditions mentioned above, they will not be permitted to participate in the study.

Where is the study run from?
University College Dublin (UCD) Perinatal Research Centre at the National Maternity Hospital (Ireland)

When is the study starting and how long is it expected to run from?
April 2020 to March 2021

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
Prof. Fionnuala McAuliffe
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Contact information

Type(s)
Scientific

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Additional identifiers

EudraCT/CTIS number
Nil known

IRAS number

ClinicalTrials.gov number
Nil known

Secondary identifying numbers
Nil known

Study information

Scientific Title
"VR Baby" in midwifery education: a prospective observational study

Study objectives
The hypothesis of the proposed research study is that virtual reality can provide an enhanced learning experience and improve the understanding of invisible concepts. Midwifery education has a unique need for VR as an educational tool to enhance learning and understanding of the fetus during pregnancy and associated conditions.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 07/07/2020, Human Research Ethics Committee at University College Dublin (Office of Research Ethics, Roebuck Castle, Belfield, Dublin 4, Ireland; +353 (0)1 716 8767; hrec@ucd.ie), ref: LS-20-09-McAuliffe

Study design
Prospective observational study

Primary study design
Observational

Secondary study design
Cohort study

Study setting(s)
Other

Study type(s)
Other

Participant information sheet
Not available in web format, please use contact details to request a participant information sheet.

Health condition(s) or problem(s) studied
Effect of virtual reality in midwifery education

Interventions
Recruitment will take place via Brightspace, an eLearning University platform, and class announcements. Participants will be asked to provide written informed consent. The study is being carried out under the government-directed protocol and guidance in relation to COVID-19. The participants will undergo a lesson in a virtual reality learning environment on the topic of fetal lie, position, and presentation in pregnancy. Participants are given a short introduction on

the use of the VR headset and controls. The participants then use the headset for 15 minutes. The participants' knowledge is assessed with a pre-test (MCQ1) and 2 post-test (MCQ2&3) 10-question MCQ. MCQ 1 will be taken immediately prior to the learning experience (control vs intervention), MCQ 2 will be taken immediately after the intervention and MCQ 3 will be taken 1 week later, after the intervention. This is followed by a questionnaire on the learning experience, which will assess attitudes and opinions on the VRLE and a questionnaire on the design of the virtual reality learning environment.

Intervention Type
Device

Phase
Not Applicable

Primary outcome measure
Knowledge measured by differences in MCQ scores pre and post test

Secondary outcome measures
1. Attitudes and opinions on the learning experience measured by a validated scale, the student satisfaction in learning and self-confidence scale, a 5-point Likert scale completed immediately after the learning experience
2. Attitudes and opinions on the design of the virtual reality learning environment measured by a validated scale, the simulation design scale adapted for the VRLE, a 5-point Likert scale completed immediately after the learning experience
3. Side effect profile to help assess the usability, measured using a questionnaire immediately after the learning experience

Overall study start date
01/04/2020

Completion date
31/03/2021

Eligibility

Key inclusion criteria
All students studying midwifery in both the undergraduate and graduate entry programmes at University College Dublin

Participant type(s)
Healthy volunteer

Age group
Adult

Sex
Both

Target number of participants
40

Key exclusion criteria
1. Non-English speaker
2. Aged under 18 years
3. Medical conditions: epilepsy, pre-existing binocular vision disturbances, psychiatric disorders, heart conditions, or other serious medical conditions

Date of first enrolment
01/10/2020

Date of final enrolment
31/03/2021

Locations

Countries of recruitment
Ireland

Study participating centre
UCD Perinatal Research Centre
Obstetrics and Gynaecology
School of Medicine
University College Dublin
65/66 Lower Mount Street (3rd Floor)
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D2

Sponsor information

Organisation
University College Dublin

Sponsor details
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Sponsor type
University/education

Website
https://www.ucd.ie/medicine/perinatal/

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

Publication and dissemination plan
Planned publication in a high-impact peer-reviewed journal.

Intention to publish date
07/07/2021

Individual participant data (IPD) sharing plan
The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

IPD sharing plan summary
Available on request