

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

Submission date 30/11/2020	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 02/12/2020	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
Last Edited 01/12/2020	Condition category Pregnancy and Childbirth	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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

fionnuala.mcauliffe@ucd.ie

Contact information

Type(s)

Scientific

Contact name

Prof Fionnuala McAuliffe

ORCID ID

<https://orcid.org/0000-0002-3477-6494>

Contact details

UCD Perinatal Research Centre

Obstetrics and Gynaecology

School of Medicine

University College Dublin

65/66 Lower Mount Street (3rd Floor)

Dublin

Ireland

D2

+353 (0)1 637 3126

fionnuala.mcauliffe@ucd.ie

Additional identifiers

Clinical Trials Information System (CTIS)

Nil known

ClinicalTrials.gov (NCT)

Nil known

Protocol serial number

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

Study type(s)

Other

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(s)

Knowledge measured by differences in MCQ scores pre and post test

Key secondary outcome(s)

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

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

Healthy volunteers allowed

No

Age group

Adult

Sex

All

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)
Dublin
Ireland
D2

Sponsor information

Organisation
University College Dublin

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

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

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes