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Virtual patient simulation to improve nurses' relational skills in a continuing education context

Submission date 03/07/2020	**Recruitment status** No longer recruiting	[_] Prospectively registered
		[_] Protocol
Registration date 03/07/2020	**Overall study status** Completed	[_] Statistical analysis plan
		[X] Results
Last Edited 17/03/2022	**Condition category** Other	[_] Individual participant data

Plain English summary of protocol

Background and study aims
Nurses must meet professional standards by attending continuing education activities. Despite the potential of virtual patient simulation in nursing education, it has rarely been used in nurses' continuing education to address relational skills. We developed an automated virtual patient simulation informed by motivational interviewing to enhance nurses' relational skills. The simulation features an HIV-positive man struggling to adhere to his medication. Quizzes and feedback loops embedded in the simulation allow learners to observe the consequences of their choices. This study aimed to assess nurses' perception of simulation's acceptability. Specific objectives were: to measure the simulation design elements, its role in supporting practice, its quality and technology acceptance, and the achievement of learning objectives; to explore nurses' learning experience.

Who can participate?
French-speaking registered nurses working in Quebec, Canada, who self-reported as having basic computer skills.

What does the study involve?
Nurses have to fill out a first online questionnaire to get an overall picture of their sociodemographic characteristics (e.g. age, experience as nurses, etc). Then, they are invited to consult the virtual patient simulation, which is a form of digital training lasting 45 minutes, to help them in consolidating their communications skills with the virtual patient. When they complete their participation in the virtual patient simulation, they are invited to complete an online questionnaire (around 20 minutes). The last step, involving the nurses who want to share their experience of having participated in the virtual patient simulation, is the online focus group (qualitative data collection).

What are the possible benefits and risks of participating?
The possible benefits are: the improvement of nurses' communication skills, the awareness of their own communication style, the identification of nurses' strengths and weaknesses.
The risk of participating is the stress caused by the use of a computer.

Where is the study run from?
This is an online study. All the nurses from Quebec have access to it. However, the study is run from Montreal (Canada)

When is the study starting and how long is it expected to run for?
August 2018 to September 2019.

Who is funding the study?
The development of this simulation was funded by a student project grant from Quebec Network on Nursing Intervention Research, by a planning and dissemination grant from the Canadian Institutes of Health Research (CIHR) [144030], and by a doctoral scholarship allocated to GR from the CIHR [337439]. GR received doctoral scholarships from the Quebec Network on Nursing Intervention Research, the Fonds de recherche du Québec santé, the CIHR, and Quebec' s Ministère de l'Éducation et de l'Enseignement supérieur.

Who is the main contact?
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Contact information

Type(s)
Scientific

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Additional identifiers

Study information

Scientific Title
Virtual patient simulation to improve nurses' relational skills in a continuing education context: A convergent mixed-methods study

Study objectives

This study aimed to quantitatively and qualitatively assess the acceptability of a virtual patient (VP) simulation to improve nurses' relational skills in a continuing education (CE) context.
Our specific research objectives were: a) to measure the extent of the VP simulation nurses' perceived acceptability in regards of the simulation design elements, of the global system quality and the technology acceptance, of the role simulation plays in supporting nurses' professional practice, and of the achievement of learning objectives; b) to explore nurses' learning experience; c) to deepen understanding of how the VP simulation can contribute to nurses' uptake of relational skills, to overall learning and its transfer into practice.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Approved 20/11/2018, Research Ethics Committee of the University of Montreal Hospital Centre (Tour R, 900 St-Denis Street, 3rd floor, Montreal, Qc/Canada, H2X 0A9; 1-514-890-8000, extension14485; ethique.recherche.chum@ssss.gouv.qc.ca), ref 18.243

Study design
Multicenter interventional study

Primary study design
Interventional

Study type(s)
Other

Health condition(s) or problem(s) studied
The simulation is about nurses' communication skills in a situation of medication non-adherence

Interventions
A convergent mixed methods study. First, a pre-experimental study is performed with a one-group post-test design to measure nurses' perceptions of the VP simulation. Second, a qualitative exploratory design is used to describe nurses' learning experience and to further nuance and deepen understanding of the acceptability of the intervention by using complementary topics that are not covered by the quantitative component.

A Web- and screen-based program, available on computer or tablet, that allows learners to interact with a two-dimensional animated human character called the "virtual patient." Learners emulate the role of the healthcare providers, within a first-person perspective.
There is one 45-minutes consultation session.
Regarding the pre-experimental nature of the trial, there is no control group.

Intervention Type
Behavioural

Primary outcome(s)
1. VP simulation design elements; global system quality and technology acceptance; role of simulation in supporting nurses' professional practice and achievement of learning objectives are measured with a 4-points Likert scale (1 = Strongly disagree; 2 = Disagree; 3 = Agree; 4 = Strongly agree) post-intervention (no timeline).
2. In the qualitative data collection at a single timepoint post-intervention, these topics are of

interest: motivations, perceived difficulties for study participation, and concrete implications for nursing practice following participation in the virtual patient simulation.

Key secondary outcome(s))
There are no secondary outcome measures

Completion date
24/09/2019

Eligibility

Key inclusion criteria
1. Registered nurses working in Quebec (Canada)
2. Self-reported having basic computer literacy skills
3. Understand and speak French.

Participant type(s)
Health professional

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Total final enrolment
54

Key exclusion criteria
Does not meet inclusion criteria

Date of first enrolment
24/03/2019

Date of final enrolment
24/08/2019

Locations

Countries of recruitment
Canada

Study participating centre
University of Montreal Hospital Centre
1000, Rue Saint-Denis

Montreal
Canada
H2X 0C1

Sponsor information

Organisation
Université Laval

ROR
https://ror.org/04sjchr03

Funder(s)

Funder type
Government

Funder Name
Canadian Institutes of Health Research

Alternative Name(s)
Instituts de Recherche en Santé du Canada, The Canadian Institutes of Health Research (CIHR), Canadian Institutes of Health Research (CIHR), Canadian Institutes of Health Research | Ottawa ON, CIHR - Welcome to the Canadian Institutes of Health Research, CIHR, IRSC

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Canada

Funder Name
Réseau de recherche portant sur les interventions en sciences infirmières du Québec

Alternative Name(s)
Quebec Network on Nursing Intervention Research, Réseau RRISIQ Network, Réseau de recherche en interventions en sciences infirmières du Québec, RRISIQ

Funding Body Type

Private sector organisation

Funding Body Subtype
Other non-profit organizations

Location
Canada

Funder Name
Quebec Healthcare Research Fund

Funder Name
Quebec Ministry of Higher Education

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.
Geneviève Rouleau, Genevieve.rouleau.chum@ssss.gouv.qc.ca
Type of data: descriptive statistical analyses
Data anonymisation and individual information will be changed to protect the privacy and confidentiality of participants' identity.
No date is fixed because the datasets will become available only if the principal investigator has reasonable request. Because the study's findings are part of Geneviève Rouleau's PhD thesis, the datasets won't be available until the final deposit of the thesis will be approved by Université Laval.

IPD sharing plan summary
Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		04/01/2022	17/03/2022	Yes	No