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# Development and evaluation of an online course aiming to train nurses and nursing students in brief motivational interventions

**Submission date**
22/09/2019

**Recruitment status**
No longer recruiting

**Registration date**
14/10/2019

**Overall study status**
Completed

**Last Edited**
01/09/2021

**Condition category**
Other

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

## Plain English summary of protocol

Background and study aims
Non-communicable diseases (illnesses that cannot be caught from people or animals), such as heart and blood vessel diseases and diabetes, are becoming more and more widespread, and are a major cause of death worldwide. There is a great deal of evidence showing that changing healthy lifestyle choices, such as quitting smoking, eating a healthier diet and taking prescribed drugs regularly, can help to lower the risk of developing these diseases and even reduce symptoms in existing sufferers. Many patients can be reluctant to make lifestyle changes and so helping to motivate them is very important. Brief counseling is a goal-oriented, motivational, individualized intervention approach that can be used by nurses to help encourage changes in behavior. Although brief counseling has been shown to be very effective, few nurses and nursing students are trained in it due to high costs and low availability of training. The aim of this study is to develop and evaluate two online courses (E_MOTIV_A and E_MOTIV_B) designed to help nurses and nursing students understand the techniques of brief counseling and apply them in their day-to-day work.

Who can participate?
Students in a Bachelor of Science in Nursing (BoN) program undertaking primary healthcare courses. This BoN program includes both registered nurses that achieved a college-level diploma in nursing undertaking university-level education, and nursing students.

What does the study involve?
Participants (i.e. BoN students) will be allocated to one of the two brief counseling courses. The first, the E_MOTIV_A course, will be adapted to certain characteristics of participants, for example attitudes and beliefs about brief counseling and risk factors. The second, the E_MOTIV_B course, will be based on learning strategies commonly used in continuing education. All participants will be assigned an identification number that they can use to log in on a website to complete the online training sessions. The three sessions in each course will last from 20 to 45 minutes. Sessions involve training in brief counseling in different practice clinical situations. This is in the form of role-modeling videos, in which a role model (cardiology nurse practitioner) evaluates a patient's motivation to change their lifestyle for the benefit of their health (i.e.

quitting smoking, improving diet, taking prescribed medication regularly) and intervenes appropriately. Each of the clinical situations features patients with different levels of motivation towards changing their lifestyle. After completing session 2 and up until 28 days after the beginning of the study, participants complete a number of questionnaires and usage data is collected from the website in order to compare how well the E_MOTIV_A and E_MOTIV_B courses has been received and their effectiveness.

What are the possible benefits and risks of participating?
Participants will benefit from receiving training in brief counseling which they can include in their College of Registered Nurses of Quebec portfolio. There are no notable risks involved with taking part in this study.

Where is the study run from?
Institut de Cardiologie de Montréal (Canada)

When is the study starting and how long is it expected to run for?
January 2019 to June 2020

Who is funding the study?
1. Canadian Institutes of Health Research (Canada)
2. Montreal Heart Institute's Research Center (Canada)
3. Quebec's Minister of Higher Education, Research and Science (Canada)
4. Canadian Nurses Foundation (Canada)
5. Faculty of Nursing of Université de Montréal (Canada)
6. Fonds de recherche du Québec - Santé (Canada)
7. Sanofi (Canada)

Who is the main contact?
1. Mr Guillaume Fontaine (public), guillaume.fontaine@umontreal.ca
2. Dr Sylvie Cossette (scientific), sylvie.cossette.inf@umontreal.ca

# Contact information

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Public

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Scientific


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## Additional identifiers

### Protocol serial number
ICM-2020-2679, 20-052-CERSES-D

## Study information

### Scientific Title
Development and evaluation of a theory-based, adaptive e-learning course to support Bachelor of Science in Nursing students’ intentions to provide brief counseling

### Acronym
E_MOTIV

### Study objectives
Current hypothesis as of 01/06/2020:
Brief counseling courses for nurses and nursing students are mainly face-to-face and group-based. This limits the accessibility and personalization of such courses. Moreover, these courses rarely target the socio-cognitive determinants (i.e., nurses' and nursing students’ beliefs, attitudes, norms, controls) that predict the intention to provide brief counseling and, ultimately, the actual provision of brief counseling in clinical practice. We therefore propose, in this study, to develop and evaluate a theory-based, adaptive e-learning course targeting socio-cognitive determinants in nurses and nursing students to increase the intentions to provide brief counseling for smoking cessation, unhealthy diet and non-adherence to drug treatment.

Primary Objective
The primary objective of this study is to compare the effect of the E_MOTIV_A course (experimental intervention; theory-based, adaptive e-learning course) and the E_MOTIV_B course (control intervention; nonadaptive e-learning course) on the change in the score of intention from baseline (-T1) to follow-up (-T4) to provide brief counseling in nurses and nursing students (H1).

Secondary Objectives
To compare the effect of the E_MOTIV_A and E_MOTIV_B courses on nurses' and nursing students' attitudes (H2), subjective norms (H3), perceived behavioral controls (H4), behavioral beliefs (H5), normative beliefs (H6), and control beliefs (H7).

Exploratory Objectives
To determine, among the nurses and nursing students, what are the socio-cognitive determinants correlated with the intention to implement brief counseling at T4.

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Previous hypothesis:
Brief counseling courses for nurses are mainly face-to-face and group-based. This limits the accessibility and personalization of such courses. Moreover, these courses rarely target the socio-cognitive determinants (ie, nurses' beliefs, attitude, norm, control) that predict the intention to implement brief counseling and, ultimately, the implementation of brief counseling by nurses. We therefore propose, in this study, to develop and evaluate a theory-based, adaptive e-learning course targeting socio-cognitive determinants in nursing staff to increase the implementation of brief counseling for smoking cessation, unhealthy diet and non-adherence to drug treatment.

Primary Objective
The primary objective of this study is to compare, at 40 ± 10 days following the beginning of the training, the effect of the E_MOTIV_A course (experimental intervention; theory-based, adaptive e-learning course) and the E_MOTIV_B course (control intervention; nonadaptive e-learning course) on the change in the score of intention from baseline (-T1) to follow-up (T4) to implement brief counseling by the nursing staff (H1).

Secondary Objectives
To compare, at 40 ± 10 days following the beginning of the training, the effect of the E_MOTIV_A and E_MOTIV_B courses on self-reported implementation of brief counseling (H2), duration of brief counseling interventions (H3), attitude (H4), subjective norms (H5), perceived behavioral control (H6), behavioral beliefs (H7), normative beliefs (H8), and control beliefs (H9) in nursing staff.

Exploratory Objectives
To determine, among the nursing staff, what are the socio-cognitive determinants correlated with: (1) the intention to implement brief counseling at T4; (2) the self-reported implementation of brief counseling at T4?

## Ethics approval required
Old ethics approval format

## Ethics approval(s)
Current ethics approval as of 01/06/2020:
Approved 17/12/2019, Montreal Heart Institute Ethics Committee (5000, rue Bélanger, Montréal, Québec, Canada, H1T 1C8; +1 514 376 3330 ext 3629/3533/2896; cer.icm@icm-mhi.org), ref: 2020-2679

Previous ethics approval:
Pending, Montreal Heart Institute Ethics Committee (5000, rue Bélanger, Montréal, Québec, Canada, H1T 1C8; +1 514 376 3330 ext 3629/3533/2896; cer.icm@icm-mhi.org), ref: 2020-2679

## Primary study design
Interventional

## Study design
Two-group, single-blind, randomized controlled trial (RCT)

## Study type(s)
Other

## Health condition(s) or problem(s) studied
Improving effectiveness of health improvement motivation provided to patients by nurses and nursing students

## Interventions
Randomization will be performed following the completion of baseline measurements from a list provided by the off-site coordination center. Random assignment of participants will follow a 1: 1 allocation with random block sizes determined by the coordination center to minimize the risk of group imbalances. Following this assignment, participants will receive a standardized e-mail containing a hypertext link to the experimental or control group web platform. The Study Coordinator will be aware of the assignment to manage e-mails sent to participants in the experimental group or control group.

Participants will be allocated to one of the two brief counseling courses. The first, the E_MOTIV_A course, will be adapted to certain characteristics of participants, for example attitudes and beliefs about brief counseling and risk factors, to select the optimal learning path for each participant among several learning paths pre-programmed by experts. The second, the E_MOTIV_B course, will be based on learning strategies commonly used in continuing education. Both courses will be accessible for 50 days, available online and have the same appearance.

All participants will be assigned an identification number that they can use to log in on a website to complete the online training sessions. The three sessions in each course will last from 20 to 45 min. Sessions involve training in brief counseling in different hypothetical clinical situations. This is in the form of role modeling videos, in which a role model (cardiology nurse practitioner) evaluates a patient’s motivation to change their lifestyle for the benefit of their health (i.e. quitting smoking, improving diet, taking prescribed medication regularly) and intervenes appropriately. Each of the clinical situations features patients with different levels of motivation towards changing their lifestyle. After 50 days, participants complete a number of questionnaires and usage data is collected from the website in order to compare how well the E_MOTIV_A and E_MOTIV_B courses has been received and their effectiveness.

## Intervention Type
Behavioural

## Primary outcome(s)
Current primary outcome measure as of 01/06/2020:
Score of intention to provide brief counseling for smoking, diet, and adherence to drug treatment (continuous score of 5 to 35 for each risk factor divided by 3) in participants between baseline (-T1) and follow-up (T4). This will be measured using the Brief Counseling Nursing Practices Questionnaire - Abridged Version based on the Theory of Planned Behavior to explain sociocognitive predictors that will influence nurses' and nursing students’ clinical practice. This questionnaire adapted from the PIPECT developed and validated by Lepage, Champagne. The

questionnaire consists of 48 items related to sociocognitive determinants of brief behavioral change counseling (48 items, 7 subscales, Cronbach alphas ranging from 0.70 to 0.92).

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Previous primary outcome measure:
Score of intention to implement brief counseling for smoking, diet, and adherence to drug treatment (continuous score of 5 to 35 for each risk factor divided by 3) in nurses between baseline (-T1) and follow-up (T4, i.e. 41 to 50 days after the beginning of the training). This will be measured using the Brief Counseling Nursing Practices Questionnaire based on the Theory of Planned Behavior to explain sociocognitive predictors that will influence nurses' clinical practice. This questionnaire adapted from the PIPECT developed and validated by Lepage, Champagne. The questionnaire consists of 90 items divided into two sections: self-reported implementation of brief behavior change counseling (42 items, 3 subscales, internal consistency not applicable); sociocognitive determinants of brief behavioral change counseling (48 items, 7 subscales, Cronbach alphas ranging from 0.70 to 0.92).

## Key secondary outcome(s)

Current secondary outcome measures as of 01/06/2020:
1. Score of attitudes regarding brief counseling (continuous score of 6 to 42) in nurses and nursing students from baseline (-T1) to follow-up (T4)
2. Score of subjective norms regarding brief counseling (continuous score of 4 to 28) in nurses and nursing students from baseline (-T1) to follow-up (T4)
3. Perceived behavioral control score for brief counseling (continuous score of 7 to 49) in nurses and nursing students from baseline (-T1) to follow-up (T4)
4. Score of behavioral beliefs regarding brief counseling (continuous score of -15 to 15) in nurses and nursing students from baseline (-T1) to follow-up (T4)
5. Score of normative beliefs regarding brief counseling (continuous score of -18 to 18) in nurses and nursing students from baseline (-T1) to follow-up (T4)
6. Score of control beliefs regarding brief counseling (continuous score of -18 to 18) in nurses and nursing students from baseline (-T1) to follow-up (T4)
7. Intrinsic load score (continuous score of 0 to 10) in nurses and nursing students at follow-up (T4) measured using the French version of the Cognitive Load Index (CCI) consisting of 10 items distributed across three subscales to measure different types of cognitive load: intrinsic load (3 items, alpha 0.83); extrinsic load (3 items, alpha 0.70) and essential load (4 items, alpha 0.96)
8. Extrinsic load score (continuous score from 0 to 10) in nurses and nursing students at follow-up (T4) measured using the French version of the Cognitive Load Index (CCI) consisting of 10 items distributed across three subscales to measure different types of cognitive load: intrinsic load (3 items, alpha 0.83); extrinsic load (3 items, alpha 0.70) and essential load (4 items, alpha 0.96)
9. Essential load score (continuous score from 0 to 10) in nurses and nursing students at follow-up (T4) measured using the French version of the Cognitive Load Index (CCI) consisting of 10 items distributed across three subscales to measure different types of cognitive load: intrinsic load (3 items, alpha 0.83); extrinsic load (3 items, alpha 0.70) and essential load (4 items, alpha 0.96)
10. Total experiential engagement score (continuous score 1 to 5) in nurses and nursing students at follow-up (T4) measured using the French version of the User Engagement Scale – Short Form (UES-SF) consisting of 12 items distributed across four subscales to measure experiential engagement in a digital context: sustained attention (3 items, alpha 0.89); perceived user-friendliness (3 items, alpha 0.84); aesthetic appeal (3 items, alpha 0.76); and gratification (3 items, alpha 0.81)
11. Proportion of completion of training sessions and total average navigation time on each

course at follow-up (T4) measured using data collected by the web-based training platform with regard to the duration of use (minutes), the frequency of use (number of connections per user) and the percentage of participants who complete the different sessions and who consult each page

Secondary outcomes 1-6 will be measured using the Brief Counseling Nursing Practices Questionnaire - Abridged Version based on the Theory of Planned Behavior to explain sociocognitive predictors that will influence nurses' clinical practice. This questionnaire adapted from the PIPECT developed and validated by Lepage, Champagne. The questionnaire consists of 48 items related to sociocognitive determinants of brief behavioral change counseling (48 items, 7 subscales, Cronbach alphas ranging from 0.70 to 0.92).

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Previous secondary outcome measures:
1. Proportion of patients in whom the nurse reports having done brief counseling from baseline (-T1) to follow-up (T4, i.e. 41 to 50 days after the beginning of the training)
2. Mean duration (less than 3 minutes, 3 to 5 minutes, 6 to 10 minutes, more than 10 minutes) of brief counseling interventions reported by nurses from baseline (-T1) to follow-up (T4)
3. Score of attitudes regarding brief counseling (continuous score of 6 to 42) in nurses from baseline (-T1) to follow-up (T4)
4. Score of subjective norms regarding brief counseling (continuous score of 4 to 28) in nurses from baseline (-T1) to follow-up (T4)
5. Perceived behavioral control score for brief counseling (continuous score of 7 to 49) in nurses from baseline (-T1) to follow-up (T4)
6. Score of behavioral beliefs regarding brief counseling (continuous score of -15 to 15) in nurses from post-randomization (T1a) to follow-up (T4)
7. Score of normative beliefs regarding brief counseling (continuous score of -18 to 18) in nurses from post-randomization (T1a) to follow-up (T4)
8. Score of control beliefs regarding brief counseling (continuous score of -18 to 18) in nurses from post-randomization (T1a) to follow-up (T4)
9. Intrinsic load score (continuous score of 0 to 10) in nurses at follow-up (T4) measured using the French version of the Cognitive Load Index (CCI) consisting of 10 items distributed across three subscales to measure different types of cognitive load: intrinsic load (3 items, alpha 0.83); extrinsic load (3 items, alpha 0.70) and essential load (4 items, alpha 0.96)
10. Extrinsic load score (continuous score from 0 to 10) in nurses at follow-up (T4) measured using the French version of the Cognitive Load Index (CCI) consisting of 10 items distributed across three subscales to measure different types of cognitive load: intrinsic load (3 items, alpha 0.83); extrinsic load (3 items, alpha 0.70) and essential load (4 items, alpha 0.96)
11. Essential load score (continuous score from 0 to 10) in nurses at follow-up (T4) measured using the French version of the Cognitive Load Index (CCI) consisting of 10 items distributed across three subscales to measure different types of cognitive load: intrinsic load (3 items, alpha 0.83); extrinsic load (3 items, alpha 0.70) and essential load (4 items, alpha 0.96)
12. Total experiential engagement score (continuous score 1 to 5) in nurses at follow-up (T4) measured using the French version of the User Engagement Scale – Short Form (UES-SF) consisting of 12 items distributed across four subscales to measure experiential engagement in a digital context: sustained attention (3 items, alpha 0 , 89); perceived user-friendliness (3 items, alpha 0.84); aesthetic appeal (3 items, alpha 0.76); and gratification (3 items, alpha 0.81)
13. Proportion of completion of training sessions and total average navigation time on each course at follow-up (T4) measured using data collected by the web-based training platform with

regard to the duration of use (minutes), the frequency of use (number of connections per user) and the percentage of participants who complete the different sessions and who consult each page

Secondary outcomes 1-8 will be measured using the Brief Counseling Nursing Practices Questionnaire based on the Theory of Planned Behavior to explain sociocognitive predictors that will influence nurses' clinical practice. This questionnaire adapted from the PIPECT developed and validated by Lepage, Champagne. The questionnaire consists of 90 items divided into two sections: self-reported implementation of brief behavior change counseling (42 items, 3 subscales, internal consistency not applicable); sociocognitive determinants of brief behavioral change counseling (48 items, 7 subscales, Cronbach alphas ranging from 0.70 to 0.92).

### Completion date
18/06/2020

## Eligibility

### Key inclusion criteria
Current inclusion criteria as of 01/06/2020:
1. Nurse, nurse practitioner, nursing candidate or nursing student
2. Enrolled in Bachelor of Science in Nursing primary healthcare course
3. Comfortable with performing basic computer tasks (e.g. surfing the web, watching videos, taking e-mails)

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Previous inclusion criteria:
1. Nurse, nurse practitioner or nursing candidate
2. Holds a position or replacement on a full-time basis (5 days per week) or part-time (1-4 days per week) in one of the care units of the study hospitals
3. Is comfortable with performing basic computer tasks (e.g. surfing the web, watching videos, taking e-mails)

### Participant type(s)
Other

### Healthy volunteers allowed
No

### Age group
Adult

### Sex
All

### Total final enrolment
102

### Key exclusion criteria
Does not meet inclusion criteria

**Date of first enrolment**
01/04/2020

**Date of final enrolment**
21/05/2020

# Locations

**Countries of recruitment**
Canada

**Study participating centre**
**Institut de Cardiologie de Montréal (ICM)**
5000 rue Bélanger
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**Study participating centre**
**University of Montreal**
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# Sponsor information

**Organisation**
Montreal Heart Institute

**ROR**
https://ror.org/03vs03g62

# 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**
Fonds de recherche du Québec - Santé (Canada)

**Funder Name**
Canadian Nurses Foundation (Canada)

**Funder Name**
Quebec's Ministry of Higher Education (Canada)

**Funder Name**
Faculty of Nursing at Université de Montréal (Canada)

**Funder Name**
Fondation Institut de Cardiologie de Montréal (Canada)

**Funder Name**
Sanofi (Canada)

# Results and Publications

**Individual participant data (IPD) sharing plan**

The datasets generated during and/or analysed during the current study are not expected to be made available as participants' consent was not obtained for sharing datasets.

## IPD sharing plan summary

Not expected to be made available

## Study outputs

| Output type | Details | Date created | Date added | Peer reviewed? | Patient-facing? |
|---|---|---|---|---|---|
| Results article | | 21/08/2021 | 01/09/2021 | Yes | No |
| Protocol article | protocol | 31/07/2020 | 03/08/2020 | Yes | No |