



Assessment of reporting of evidencebased health care (EBHC) e-learning interventions in included studies of a Campbell systematic review

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### Conflicts of interest

### I have no actual or potential conflict of interest in relation to this presentation.





### Background

• Campbell review on e-learning of EBHC



**Education Coordinating Group** 

### E-learning of evidence-based health care (EBHC) to increase EBHC competencies in healthcare professionals: a systematic review

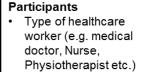
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A Campbell Systematic Review 2017:4 Published: March 2017 Search executed: May 2016



# Centre for Evidence Based Health Care

### Logic Model



 Level of education (undergraduate, postgraduate, CME)

#### Educational context Setting

Location where learning takes place

- Same place vs. distributed
- Home, workplace, university, library, classroom, bedside etc.

#### Learner context

- Background knowledge
   of EBHC
- Computer literacy
- Learning style
- Motivaton

#### Institutional context

- Structure of course
   within larger curriculum
- Role models

#### Socio-economic context

- Access to internet
- Access to information (databases and electronic journals)
- Affordability
- · Availability of electricity
- Availability of personal computers

#### Intervention Theory

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#### Adult learning theory:

- Self-motivation
- · Personalised learning
- Distributed learning

#### Intervention design

#### Components:

- Course, module, curriculum, workshop on EBHC
- Learning objectives and content of educational activity
  - EBHC enabling competencies (epidemiology, biostatistics, basic searching skills, critical thinking)
  - EBHC key competencies (asking questions, accessing literature, critically appraising literature, applying results, evaluating the process)
- Multifaceted intervention vs. Single intervention

#### Execution:

- Duration (6 weeks, one year etc)
- Intensity (e.g. 2 hours)
- Dose (e.g. twice a week; once a month)
- Timing (within study programme etc.)
- Integrated or stand-alone

#### Intervention delivery

#### Dimensions:

- Pure e-learning vs. Blended learning
- Collaborative (interactive) vs. Individual learning
- Synchronous vs. Asynchronous delivery

#### Delivery agent:

Facilitators and tutors: Attitude, communication skills, teaching skills, engagement with learners

#### Organisation and structure:

Institutions offering educational activity (cost, capacity, culture)

#### Outcomes

#### Intermediate outcomes

#### Process outcomes

- Barriers to method of teaching EBHC
- Enablers of method of teaching EBHC
- Learner satisfaction
- Teacher satisfaction
- Cost
- Attrition

#### Surrogate outcomes

- •EBHC knowledge\*
- •EBHC skills\*
- •EBHC attitude\*

#### Behaviour outcomes

- EBHC behaviour\* (e.g. Question formulation, reading habits etc)
- Evidence-based practice
- Learner adherence

#### Non-health outcomes

- Evidence-based guideline implementation
- · Health care delivery (health systems)

#### Health outcomes

- Individual health outcomes
- Population health outcomes

#### Healthcare context

Socio-cultural
Epidemiological
Ethical

Socio-economic Legal Political

\*Bold outcomes represent primary outcomes, the rest refer to secondary outcomes





### Objectives

 To assess reporting of EBHC e-learning interventions for studies included in our review using the guideline for reporting evidence-based practice educational interventions and teaching (GREET)

> Phillips et al. BMC Medical Education (2016) 16:237 DOI 10.1186/s12909-016-0759-1

**BMC Medical Education** 

#### **RESEARCH ARTICLE**





Development and validation of the guideline for reporting evidence-based practice educational interventions and teaching (GREET)

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### Methods

- Two authors assessed reporting of EBHC e-learning interventions of included studies (n=24)
- GREET checklist with judgement for each item: yes/no/unclear
- GREET 2016 explanation and elaboration paper
- Descriptive analysis





#### GREET 2015 checklist\* based upon the TIDieR guidance

#### BRIEF NAME

1. INTERVENTION: Provide a brief description of the educational intervention for <u>all</u> groups involved [e.g. control and comparator(s)].

#### WHY - this educational process

2. THEORY: Describe the educational theory (ies), concept or approach used in the intervention.

3. LEARNING OBJECTIVES: Describe the learning objectives for <u>all groups involved in the educational intervention</u>.

4. EBP CONTENT: List the foundation steps of EBP (ask, acquire, appraise, apply, assess) included in the educational intervention.

#### WHAT

5. MATERIALS: Describe the specific educational materials used in the educational intervention.

Include materials provided to the learners and those used in the training of educational intervention providers.

6. EDUCATIONAL STRATEGIES: Describe teaching / learning strategies (e.g. tutorials, lectures, online modules) used in educational intervention.

7. INCENTIVES: Describe any incentives or reimbursements provided to the learners.

#### WHO PROVIDED

8. INSTRUCTORS: For each instructor(s) involved in the educational intervention describe their professional discipline, teaching experience / expertise. Include any specific training related to the educational intervention provided for the instructor(s).

#### HOW

9. DELIVERY: Describe the modes of delivery (e.g. face-to-face, internet or independent study package) of the educational intervention. Include whether the intervention was provided individually or in a group and the ratio of learners to instructors.

#### WHERE

10. ENVIRONMENT: Describe the relevant physical learning spaces (e.g. conference, university lecture theatre, hospital ward, community) where the teaching / learning occurred.

#### WHEN and HOW MUCH

11. SCHEDULE: Describe the scheduling of the educational intervention including the number of sessions, their frequency, timing and duration.

12. Describe amount of time learners spent face to face with instructors and any designated time spent in self-directed learning activities.

#### PLANNED CHANGES

13. Did educational intervention require specific adaptation for learners? If yes, please describe adaptations made for the learner(s) or group(s).

#### UNPLANNED CHANGES

14. Was the educational intervention modified during the course of the study? If yes, describe the changes (what, why, when, and how).

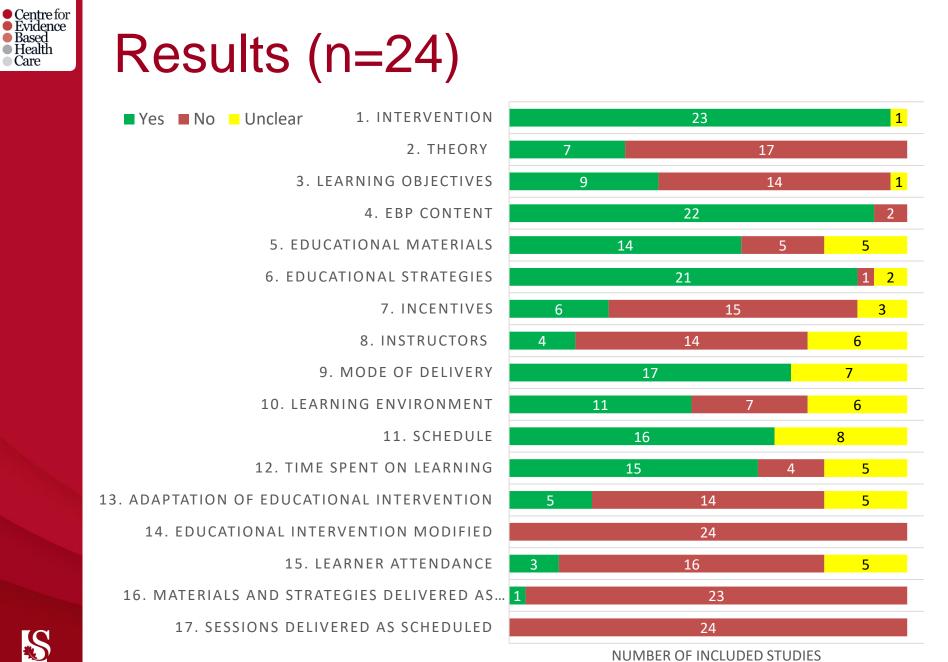
#### HOW WELL

15. ATTENDANCE: Describe the learner attendance, including how this was assessed and by whom. Describe any strategies that were used to facilitate attendance.

16. Describe any processes used to determine whether the materials (item 5) and the educational strategies (item 6) used in the educational intervention were delivered as originally planned.

17. Describe the extent to which the number of sessions, their frequency, timing and duration for the educational intervention was delivered as scheduled (item 11).





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GREET item	Yes	No	Unclear
1. Intervention	23	0	1
2. Theory	7	17	0
3. Learning objectives	9	14	1
4. EBP content	22	2	0
5. Educational materials	14	5	5
6. Educational strategies	21	1	2
7. Incentives	6	15	3
8. Instructors	4	14	6
9. Mode of delivery	17	0	7
10. Learning environment	11	7	6
11. Schedule	16	0	8
12. Time spent on learning	15	4	5
13. Adaptation of educational intervention	5	14	5
14. Educational intervention modified	0	24	0
15. Learner attendance	3	16	5
16. Materials and strategies delivered as planned	1	23	0
17. Sessions delivered as scheduled	0	24	0





### Conclusion

- Poor reporting of EBHC e-learning interventions in included studies
- GREET items mapped well onto logic model
- Unable to address secondary objectives of systematic review
- Questions that remain:
  - Which dimensions of e-learning are most effective in increasing EBHC knowledge and skills?
  - How does educational context influence EBHC elearning?
  - What is the best way to implement EBHC e-learning?







### Thank You



## Results (n=24)

GREET item	Yes	No	Unclear
1. INTERVENTION: Provide a brief description of the educational intervention for all groups involved	23	0	1
2. THEORY: Describe the educational theory, concept or approach used in the intervention	7	17	0
3. LEARNING OBJECTIVES: Describe the learning objectives for all groups involved in the educational intervention.	9	14	1
4. EBP CONTENT: List the foundation steps of EBP (ask, acquire, appraise, apply, assess) included in the educational intervention.	22	2	0





### Results cont.

GREET item	Yes	No	Unclear
5. MATERIALS: Describe the specific educational materials used in the educational intervention. Include materials provided to the learners and those used in the training of educational intervention	14	5	5
6. EDUCATIONAL STRATEGIES: Describe the teaching/learning strategies (e.g. tutorials, lectures, online modules) used in the educational intervention.	21	1	2
7. INCENTIVES: Describe any incentives or reimbursements provided to the learners	6	15	3
8. INSTRUCTORS: For each instructor(s) involved in the educational intervention describe their professional discipline, teaching experience/expertise. Include any specific training related to the educational intervention provided for the instructor(s).	4	14	6

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### Results cont.

GREET item	Yes	No	Unclear
9. DELIVERY: Describe the modes of delivery (e.g. face-to-face, internet or independent study package) of the educational intervention. Include whether the intervention was provided individually or in a group and the ratio of learners to instructors.	17	0	7
10. ENVIRONMENT: Describe the relevant physical learning spaces (e.g. conference, university lecture theatre, hospital ward, community) where the teaching/learning occurred	11	7	6
11. SCHEDULE: Describe the scheduling of the educational intervention including the number of sessions, their frequency, timing and duration.	16	0	8
12. Describe the amount of time learners spent in face to face contact with instructors and any designated time spent in self-directed learning activities.	15	4	5





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### Results cont.

GREET item	Yes	No	Unclear
13. Did the educational intervention require specific adaptation for the learners? If yes, please describe the adaptations made for the learner(s) or group(s).	5	14	5
14. Was the educational intervention modified during the course of the study? If yes, describe the changes (what, why, when, and how).	0	24	0
15. ATTENDANCE: Describe the learner attendance, including how this was assessed and by whom. Describe any strategies that were used to facilitate attendance.	3	16	5
16. Describe any processes used to determine whether the materials (item 5) and the educational strategies (item 6) used in the educational intervention were delivered as originally planned.	1	23	0
17. Describe the extent to which the number of sessions, their frequency, timing and duration for the educational intervention were delivered as scheduled (item 11).	0	24	0