

PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	eLearning for health system leadership and management capacity building: a protocol for a systematic review
AUTHORS	Tudor Car, Lorainne; Atun, Rifat

VERSION 1 - REVIEW

REVIEWER	Prashanth Nuggehalli Srinivas Institute of Public Health Bangalore
REVIEW RETURNED	17-Apr-2017

GENERAL COMMENTS	The paper is a protocol for conducting a systematic review of literature. The questions are clearly described and the outcomes are also clearly identified. Search words, databases and the rationale to conduct the review is described. I have gone through the paper and have no additional comments to offer.
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REVIEWER	Professor Veena Rodrigues Norwich Medical School, University of East Anglia, UK
REVIEW RETURNED	16-May-2017

GENERAL COMMENTS	<p>BMJ Open review</p> <p>Tudor Car et al: eLearning for health system leadership and management capacity building: a protocol for a systematic review</p> <p><i>General comments</i></p> <p>This is a protocol for a systematic review to determine the effectiveness of e-learning for health system leadership and management capacity building. The authors have registered the protocol on the PROSPERO database (registration number provided) and appended the PRISMA-P checklist as an appendix indicating page numbers addressing each item.</p> <p>The topic is interesting and the authors have justified the need for this work. However, the authors could have provided some indication of the availability of good quality primary research on this subject. This would have enabled them to employ a pragmatic approach in identifying primary and secondary outcomes for this</p>
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review.

In terms of inclusion and exclusion criteria, it would be entirely appropriate to restrict this review to literature published after 1990 although I suspect that even between 1990 to the present, there will be a substantial change in the models of e-learning used to deliver educational programmes. Attempting to present results stratified by various sub-groups would also help to understand the results relevant to the subgroups.

Specific comments

1. Research question/ study objective

This is stated in the abstract (page 2) as “a systematic review on the effectiveness of eLearning for health leadership and management capacity building in improving health system outcomes” while in the body of the protocol (page 6) it is stated as “To assess use of eLearning for health leadership and management capacity building on health system outcomes including patient and population outcomes, care practice and behaviour, user satisfaction and experience, equity, and economic outcomes”.

- a. Assessing the ‘effectiveness’ of e-learning (does it work?) is specific and quite different from assessing the ‘use of e-learning’ (not specific; could include assessment of effectiveness as also other measures or simply whether it is used for this purpose).
- b. While it is laudable to assess the effectiveness of e-learning courses on health system outcomes, I feel this might have to be done in 2 stages: i) Assess the effectiveness of e-learning for health leadership and management capacity building and if this is found to be effective, then ii) assess effectiveness of e-learning for health leadership and management capacity building on health system outcomes. This is because i) is a subset of ii) and also more likely to be reported in primary research. Additionally, when assessing health system outcomes, it would be potentially difficult to assess how much of it could actually be attributed to the e-learning courses as it is likely to be influenced by a variety of factors not related to the e-learning at all!

2. Search strategy (page 8)

Item no 10 on the PRISMA-P checklist suggests that a draft search strategy for at least one database should be included but this has not been provided. It would have been helpful to have sight of this and the keywords used because of the multiple interventions and multiple outcomes being assessed. It could also have revealed whether there is primary research available using study designs such as RCTs to evaluate whole systems or programmes which form the outcomes of interest in this study.

3. Capacity v capability

Throughout the document the authors refer to workforce leadership capacity building but in my opinion both capacity (increasing volume/ number of trained current and future workforce) and capability (increasing leadership potential of current workforce) need to be built to have any chance of achieving the outcomes. Certainly to strengthen the existing health systems it is the capability that needs improvement.

4. **Importance of doing this review** (page 5)

With reference to Kirkpatrick's model for evaluation of educational programmes, the authors suggest that this model focuses on knowledge, skills, attitudes and satisfaction. No reference is provided here. Kirkpatrick's model does focus on 4 levels but these are 1) reaction (satisfaction or not) 2) learning (knowledge), 3) behaviour and 4) results. However, levels 3 & 4 (particularly level 4) are notoriously difficult to assess. And hence often not included in primary research/ evaluation studies. Therefore it is potentially going to be difficult to assess in secondary research studies.

5. **Data extraction** (page 9)

The authors start by saying that a standardised proforma will be used for data extraction and then go on to discuss piloting the form and amending it based on feedback. This doesn't make sense because 1) several standardised/ validated tools are already available for this purpose and 2) why pilot another form and whose feedback would be used for this? Please state the validated tool that will be used for this purpose providing a reference to substantiate this.

6. **Data analysis** (page 11)

The authors describe the subgroup analyses that will be performed which is important as the results might differ across the various strata mentioned. One point to consider is the recent mushrooming of MOOCs on a number of relevant topics now available worldwide. While MOOCs are mentioned on page 1, they are not referred to in this section as MOOCs are likely to be available across the board and might confound analysis carried out by income level of country.

The authors do not discuss how study quality will be scored and whether inclusion of studies would be determined by the outcome of quality assessment i.e a cut-off point will be determined and used.

VERSION 1 – AUTHOR RESPONSE

1. We would like to thank Dr Prashanth Nuggehalli Srinivas for his comments and time.
2. We are also most grateful to Prof Rodrigues for her helpful suggestions and comments. Please see below for a detailed response to each comment:

General comments

This is a protocol for a systematic review to determine the effectiveness of e-learning for health system leadership and management capacity building. The authors have registered the protocol on the PROSPERO database (registration number provided) and appended the PRISMA-P checklist as an appendix indicating page numbers addressing each item.

The topic is interesting and the authors have justified the need for this work. However, the authors could have provided some indication of the availability of good quality primary research on this subject. This would have enabled them to employ a pragmatic approach in identifying primary and secondary outcomes for this review.

In terms of inclusion and exclusion criteria, it would be entirely appropriate to restrict this review to literature published after 1990 although I suspect that even between 1990 to the present, there will be a substantial change in the models of e-learning used to deliver educational programmes. Attempting to present results stratified by various sub-groups would also help to understand the results relevant to the subgroups.

Reply: Thank you for your comments. Our searches have been restricted from 1990 onwards and we have added an additional subgroup analysis taking into account different types of participants. In the section "Why it is important to do this review", we note that the literature in this area is scarce.

Specific comments

1. Research question/ study objective

This is stated in the abstract (page 2) as “a systematic review on the effectiveness of eLearning for health leadership and management capacity building in improving health system outcomes” while in the body of the protocol (page 6) it is stated as “To assess use of eLearning for health leadership and management capacity building on health system outcomes including patient and population outcomes, care practice and behaviour, user satisfaction and experience, equity, and economic outcomes”.

a. Assessing the ‘effectiveness’ of e-learning (does it work?) is specific and quite different from assessing the ‘use of e-learning’ (not specific; could include assessment of effectiveness as also other measures or simply whether it is used for this purpose).

Reply: Many thanks for highlighting this ambiguity. We now use the term “effectiveness”.

b. While it is laudable to assess the effectiveness of e-learning courses on health system outcomes, I feel this might have to be done in 2 stages: i) Assess the effectiveness of e-learning for health leadership and management capacity building and if this is found to be effective, then ii) assess effectiveness of e-learning for health leadership and management capacity building on health system outcomes. This is because i) is a subset of ii) and also more likely to be reported in primary research. Additionally, when assessing health system outcomes, it would be potentially difficult to assess how much of it could actually be attributed to the e-learning courses as it is likely to be influenced by a variety of factors not related to the e-learning at all!

Reply: Thank you very much for your insightful comments. The literature highlights that medical education in general, and education on leadership and management can have a notable impact on health services and systems. Yet, experimental study designs at health system level are challenging

and it is likely that the evidence is lacking. There is however a need to take into consideration the system-level impact of education (in particular on leadership and management) and we would like to contribute to this discourse with our protocol and framework. As per your helpful comment, we have now added capacity building outcomes (e.g. knowledge, skills, attitudes and behaviours) to health system outcomes in our protocol.

2. Search strategy (page 8)

Item no 10 on the PRISMA-P checklist suggests that a draft search strategy for at least one database should be included but this has not been provided. It would have been helpful to have sight of this and the keywords used because of the multiple interventions and multiple outcomes being assessed. It could also have revealed whether there is primary research available using study designs such as RCTs to evaluate whole systems or programmes which form the outcomes of interest in this study.

Reply: Thank you for pointing this out. We have now added the MEDLINE search strategy to the Supplementary material and the following text to the "Search strategy" section of the protocol: "As healthcare management and leadership embrace a range of different competences described using a diverse terminology, we have decided to focus our search strategy on terms relating to eLearning and health professionals in order to increase its sensitivity. The MEDLINE search strategy will be adapted to other electronic databases (Supplementary material)."

3. Capacity v capability

Throughout the document the authors refer to workforce leadership capacity building but in my opinion both capacity (increasing volume/ number of trained current and future workforce) and capability (increasing leadership potential of current workforce) need to be built to have any chance of achieving the outcomes. Certainly to strengthen the existing health systems it is the capability that needs improvement.

Reply: Thank you for your helpful comment. We define capacity building in our paper in line with WHO's and UNPD's definitions as an intervention focusing both on growth as well as strengthening of the existing workforce. We have now added a reference to the capacity building definition and further clarify that capacity building includes development of new as well as strengthening of the current workforce.

4. Importance of doing this review (page 5)

With reference to Kirkpatrick's model for evaluation of educational programmes, the authors suggest that this model focuses on knowledge, skills, attitudes and satisfaction. No reference is provided here. Kirkpatrick's model does focus on 4 levels but these are 1) reaction (satisfaction or not) 2) learning (knowledge), 3) behaviour and 4) results. However, levels 3 & 4 (particularly level 4) are notoriously difficult to assess. And hence often not included in primary research/ evaluation studies. Therefore it is potentially going to be difficult to assess in secondary research studies.

Reply: Thank you for your comment. We have now amended this to "Miller's pyramid" and included a reference. We agree with your comment on the lack of data on behaviour and patient-related outcomes in primary research on eLearning. We intend to highlight this lack of evidence in our review and to call for future primary research that would include these outcomes.

5. Data extraction (page 9)

The authors start by saying that a standardised proforma will be used for data extraction and then go on to discuss piloting the form and amending it based on feedback. This doesn't make sense because 1) several standardised/ validated tools are already available for this purpose and 2) why pilot another form and whose feedback would be used for this? Please state the validated tool that will be used for this purpose providing a reference to substantiate this.

Reply: We apologise for the use of inaccurate terminology. The data extraction form that we mention is based on our previously used data extraction forms which will be tailored for this review. We will pilot the form among the colleagues performing data extraction to reduce discrepancies in its interpretation and the extracted data. We now clarify this further in our paper.

6. Data analysis (page 11)

The authors describe the subgroup analyses that will be performed which is important as the results might differ across the various strata mentioned. One point to consider is the recent mushrooming of MOOCs on a number of relevant topics now available worldwide. While MOOCs are mentioned on page 1, they are not referred to in this section as MOOCs are likely to be available across the board and might confound analysis carried out by income level of country.

The authors do not discuss how study quality will be scored and whether inclusion of studies would be determined by the outcome of quality assessment i.e a cut-off point will be determined and used.

Reply: We will perform different subgroup analysis according to the eLearning modality and we have now highlighted MOOCs as one of these modalities within the subgroup analysis.

For quality scoring, we will use Cochrane risk of bias assessment and the GRADE system for quality of evidence assessment. We now explain that we will not exclude studies on the basis of high risk of bias, in line with the Cochrane guidance. We also plan to perform sensitivity analysis to determine the potential effect of the quality of evidence on the outcomes.

VERSION 2 – REVIEW

REVIEWER	Professor Veena Rodrigues Norwich Medical School, UK
REVIEW RETURNED	09-Jun-2017

GENERAL COMMENTS	I am happy with the authors' responses to my comments.
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eLearning for health system leadership and management capacity building: a protocol for a systematic review

Lorraine Tudor Car and Rifat Atun

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