Author's response to reviews

Title: Evaluating methods used to teach quality improvement to undergraduate healthcare students - what works for whom, in what circumstances and why? A protocol for systematic review to inform curriculum development within pre-registration nursing.

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Version: 3
Date: 25 September 2014

Author's response to reviews: see over
Dear Editors,

Please find enclosed our revised manuscript, ‘Evaluating methods used to teach quality improvement to undergraduate healthcare students - what works for whom, in what circumstances and why? A protocol for systematic review to inform curriculum development within pre-registration nursing’.

We would like to take this opportunity in thanking both the Editorial Team and the peer reviewers - Dr Paul Shekelle and Professor Huw Davies for their time given to review this protocol. We are very grateful to have received such comprehensive and constructive feedback from this level of expertise and have confidence the revised protocol has been strengthened as a result.

As requested a point-by-point response to each of the concerns mentioned will now be provided and can be viewed through tracked changes in the Revised Protocol:

Responses to Dr Paul Shekelle’ Comments

1. The reviewer raised concerns about searching in industries such as Business and Manufacturing from 1950 onwards and questioned the relevance to modern healthcare. As a result we have revised our search strategy to focus on only healthcare literature and with a reduced timescale of 2000-2014.

   Page 9) Search Strategy

2. Clarification was sought as to how authors would identify a ‘quality improvement educational intervention’. We recognised the difficulty in this area throughout the scoping review and in hindsight this should have been explicit in the manuscript. We have now defined, for the purpose of this review, a ‘QI educational intervention’ within the inclusion/exclusion criteria.

   Page 10) Inclusion/Exclusion Criteria
3. A recommendation was made to include and look for standardised contextual factors (theoretical or empirical) in each article. Through our scoping review we identified the contextual variables that were reported and have now included these in our data extraction sheet; removing ‘hindering’ and ‘facilitating’ factors.

Page 12) Data Extraction

4. The final concern raised by the reviewer related to the lack of detail provided within the ‘synthesis’ section. By addressing the issues in points 1-3, we have been able to provide a more detailed account of how we will synthesise our data.

Page 13) Data Synthesis

Responses to Professor Huw Davies’

5. The reviewer points out that our study ‘population’ in itself exposes important differences. We understand that including both postgraduate and undergraduate students would create two very different populations that should in fact be dealt with separately. Therefore, we will include only undergraduate students and concentrate on utilising evidence found only within healthcare from to 2000-2014.

Page 10) Inclusion/Exclusion

6. Clarity was requested from authors as to what outcomes measures would be assessed in the review. We have now provided clarity of the outcome measures that are of interest which include: knowledge, skills, attitudes and behaviour (Kirkpatrick Evaluation Model – Level 2 and 3) which were chosen to reflect our theoretical framework.

Page 13) Data Synthesis and Page 6-7) Background

7. Uncertainty was raised over whether the main interest of the review lay in either defining an appropriate curriculum or in exploring the effectiveness of diverse education approaches. The authors accept that points previously made in the review may have caused ambiguity and as a result removed any comments causing confusion with additional clarity provided within the aims and objectives.

Pages 8) Aims and Objectives and Pages 4-7) Background;

8. Elaboration on the theoretical framework used by the authors was requested. As a result we have provided a more detailed account of our theoretical framework which links closely to our outcome measures of interest – Skills, knowledge and attitude and behaviour. This will be used to guide the direction of our narrative synthesis.

Pages 6-7) Background and Page 13) Data Synthesis
9. The reviewer wished to know ‘how’ the authors would integrate and account for the diverse range of contexts (geographical, chronological, industry sectors) that may arise from the review. Amending Point 5 has resolved this issue.

   \textbf{Page 10) Inclusion/Exclusion}

10. Doubts in the quality appraisal method were highlighted (CASP Qualitative Tool). As the review has now been refined and refocused, a decision to include all study designs has been agreed. We have chosen therefore to adopt a new method (EPPI Weight of Evidence) to reflect our ‘realist’ approach to answering the review question and synthesising the data.

   \textbf{Page 12) Quality and Relevance}

11. Again, ambiguity was identified within the background section as to whether the issue was around one of teaching QI or the other of Implementing QI. To ensure clarity, we have removed comments in relation to implementation of QI (particularly information about Deming) and have focussed the background on teaching QI only. The aims and objectives of the review have been amended to reflect this also.

   \textbf{Page 8) Aims and Objectives and Page 4-7) Background}

\textbf{General}

1. As a result of the changes made, we have amended the title of our Systematic Review to reflect this.

   \textbf{Page 1) Title}

2. The Systematic Review has now been registered with Prospero and the registration number is provided.

   \textbf{Page 3) Prospero Registration Number}

Again, we would like to express our gratitude in having the opportunity to improve our protocol using the feedback provided. We look forward to hearing from you in due time regarding the revisions made and to answer any further question you may have.

Kind regards,

Lorraine Armstrong

Clinical Academic Fellow