Author’s response to reviews

Title: Developing a Theory-based Multimedia Intervention for Schools to Improve Young People’s Asthma: My Asthma in School (MAIS).

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Author’s response to reviews:

Dear Ladies and Gentlemen,
Attached is the revised manuscript for consideration in Pilot and Feasibility studies: 'Developing a Theory-based Multimedia Intervention for Schools to Improve Young People’s Asthma: My Asthma in School (MAIS).'
I very much appreciate the considered and knowledgeable review of the manuscript. I have now implemented the suggested changes and additions to the text, and have provided comments to your review below.
I thank you very much for your time!

Sincerely,
Dr. Gioia Mosler (corresponding author)
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Reviewer #1:

-Thank you for the opportunity to review this paper. The authors describe the development of a multi-media intervention for improving asthma control in adolescents. The topic is important and relevant and the paper is well structured. A strength of the paper is the development process of the intervention. It is based both on theory and on existing findings. The specific components of the intervention are thoroughly described.
-However, I have concerns regarding the design and validity of the feasibility study. Further, I believe the interpretations of the authors with respect to feasibility might be too optimistic as only 1 out of 8 participating schools agreed to deliver the workshops.
We agree that the study was not a formal feasibility study in terms of trying out all study procedures, however was rather an element to test the feasibility of the intervention with a view to refinement before future testing. We feel the design as a pre-post study is suitable therefore as its primary aim was to understand if the intervention was a) feasible to deliver within a school context, b) whether it was acceptable, c) provide some provisional data on outcomes of interest e.g. change in beliefs or attitude. To clarify this feasibility being more around the intervention than study we have rephrased this as feasibility phase.

We recognise that how the two elements of the intervention were presented to schools (ie temporally based on agreement to participate in the theatre provocation) is not a feasible approach and this will be refined for future work. This has now been addressed in the discussion section.

Minor comments:
- Table 1: Please include the sub-behaviours in column 1 (not only in the footnotes) in order to facilitate reading and understanding of the table. This has now been added in column 1 of the table
- Developing engaging and effective intervention elements: "More than 135,000 people have taken part…". Please delete this sentence. This is now removed
- Page 10, line 20: "Reference source not found”. Please correct this. Reference now added
- Consent: [page 13] line 28: "this is in line with the consent procedure for any future cluster randomized trial". Could you please explain this? How will a RCT be performed without data assessment? How will data be assessed without consent?

The wording has been changed for more clarity. For the theatre performances each school gave consent at a school management level. This form of gate keeper consent is common when interventions are delivered at a cluster level (i.e. in a school) and was considered appropriate. We agree that mentioning the consent procedure for any future trial is probably not appropriate here and hence have removed this comment. However a cluster RCT is a common design for school interventions. Data outcomes and assessment will be primarily with those children with asthma who undergo a separate consent procedure, however all consent processes will be reviewed before any RCT, and ethical approval of the agreed procedure will be obtained.

- How were pupils with asthma identified? Which criteria were used? Do you have any information about whether all adolescents with asthma took part in the workshops?
  o Thank you for identifying the omission on how pupils were identified with asthma. We have now added this detail.
  o Sentences added page 13; for children who participated in the theatre and were on the school asthma register

Discussion: I am not sure about the feasibility of the intervention as only 1 out of 8 schools took part in the workshops. Do you have any ideas why the other schools declined participation?
  o Some detail has now been added.
The manuscript however highlights that the recruitment strategy which offered the workshops only to schools who had initially accepted the theatre provocation was not a feasible approach. It could be that for most schools the commitment of offering a whole day of asthma teaching to selected pupils was not acceptable, or that undertaking two interventions was too much commitment. Future research will explore these barriers in more detail and consider whether it would be appropriate to offer workshops as 4, weekly sessions or at a different time of year such as the end of term when the timetable is often more flexible.

Reviewer #2:
- Thank you for the invitation to review the manuscript "Developing a Theory-based Multimedia Intervention for Schools to Improve Young People's Asthma: My Asthma in School (MAIS).". I found the manuscript novel and of interest. The methods and intervention development are well described. I believe the authors should focus on improving the structure of the introduction, discussion and conclusions. The manuscript could probably be shortened too to avoid repetition and make it easier to read.
- Consider the guidance in a resource such as (below) to structure these sections. Welch, H. G. (2004). Preparing manuscripts for submission to medical journals: the paper trail. Spine, 29(19), E442-E449. Some comments to assist with the improvement of the manuscript. Title: The title should also indicate the study is a feasibility study (?and pilot study) in line with recognised terminology, [Also consider whether it meets the criteria of a true feasibility study]
- Thank you. We recognise that the feasibility element of our study was more in relation to intervention development as opposed to a true feasibility study. For this reason we have not entitled in a feasibility study as we believe the focus on development is more appropriate. To avoid confusion we have used the term feasibility phase and clarified the objectives of this within the methods.

Abstract:

- P2L6 The aim of the study should include testing the feasibility of the developed intervention, not just develop the intervention.
- We have added this in text but clarified that it is only initial feasibility not a full feasibility study.

- P2L21 clarify whether it is 40 or 163 BCTs or subtypes of 40 etc
- 40 different BCTs, but some are the same for different elements. The total number (including repeated BCTs) is 163. I changed the text to improve understanding.

- P2L27 the conclusions should reference whether feasability has been established for future testing. Currently, the conclusions seem more appropriate for a definitive study.
- We have adjusted the discussion and conclusions to reflect our findings more adequately

- P2L4 "identified as having suboptimal control" might sound better
- Changed in text
-P2L6 "around adherence", consider "related to adherence"
  oRephrased for clarity ‘poor understanding of asthma and the need for medication’

Introduction

-Difficult to follow.
  oSeveral changes have been made to the introduction to improve the flow of thoughts and readability.

-P4L8 "conducted by the research group", what research group? Better to write in the third person.
  oWe have deleted this text as a reference is provided indicating the research group

-P5L8 keep the aim of the study consistent between title, abstract and introduction, (and conclusions)
  oText changes to reduce the word ‘aim’ in locations where the word is used more liberally, in P4L34, and P10L21. Two descriptions of aims are however included in the paper, 1) the aim of the study (e.g. P1L6), 2) the aim of the intervention itself (e.g. P5L17).

-P4L27 " a review of", yet four citations? One review or many reviews?
  oChanged to plural.

-P5L1-9 Some of this appears to be methods rather than background
  oParagraph was moved to methods section on P5

-P4L3 reference required
  oReference has been added

-P4L4 should be "well controlled"
  oChanged in text

-P4L6 General Practioner (GP)
  oChanged in text

-P4L6 split sentence before,"as well as"
  oChanged in text

-P4L10 avoid emotive words "concerning"
  o‘concerning’ has been deleted

-P5L1 remove "as outlined below"
  oChanged in text

Methods

-P13 do you state when this occurred?
  o‘Between 2015 and 2018’ – this has been added in the text
- P14 L1-4 an interesting finding that should be referenced in the discussion perhaps
 o A reference has now been added to the discussion

- P6 L8 regimen not regime
 o Changed in text

- P9 L12 remove "above"
 o Changed in text

- P10 L19 citation error
 o The reference for Figure 2 has been added in P11L19 instead

- P10 L20 is this the name of the play "In Control", clearly state this
 o Changed in text

- P10 L19 this acronym has previously been defined
 o The acronym is defined in P10L9

Results

- P15 L16 can you elaborate more on optimal numbers
 o Further details were added

- P15 L21 an interesting finding that needs to be discussed
 o A section was added to the text

- Table 4, a combination of questions are difficult to gauge with a likert scale, plus should they be a statement rather than a closed question.
 o The table has now been split in 2 parts.
 o The questions were reviewed by several members of the research team, and discussed with young people during theatre rehearsals. They were considered to provide valid answers about the participant’s experience.

- P17 L6 probably discussion and not results
 o This section has now been moved to results

Discussion

- Needs a standard structure, e.g. the suggested reference provided, Currently difficult to follow. Suggest Summary of findings, comparison to the literature, strengths and limitations, implications and future work
 o A structure with subheadings has now been added to the text

- P18 L11 sounds like a conclusion
The wording has been changed, focusing now more on discussing the practicability of the intervention, rather than conclusions about its practicability.

-P18L14 this should be in a strengths/limitations paragraph
-oThis has been added to the text

-P18L22 a conclusion
-oThis sentence was moved to explain the findings in comparison to existing evidence.

-P18L27 this paragraph does not flow well from the previous paragraph
-oWe have made some revisions to help the flow of text

Conclusions

-Too long and needs revision, e.g. P19L20 these are results not conclusions
-oWe have made some structural changes to reduce length of conclusions which we hope are more appropriate