

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Animations to communicate public health prevention messages: a realist review protocol
AUTHORS	McCorry, Kathleen; Maniatopoulos, Gregory; Errington, Linda; Land, Ellie; Craig, Michael; Vijaykumar, Santosh; Bärnighausen, Till; O'Brien, Nicola

VERSION 1 - REVIEW

REVIEWER NAME	Lima-Serrano, Marta
REVIEWER AFFILIATION	Universidad de Sevilla, Departamento de Enfermería
REVIEWER CONFLICT OF INTEREST	None.
DATE REVIEW RETURNED	21-Jan-2024

GENERAL COMMENTS	<p>Dear authors:</p> <p>Thank you for giving me the opportunity of reviewing your manuscript. I find the topic interesting and relevant and your work could contribute to the current literature. However, there are some aspects that could improve the methodology and the presentation of your manuscript. Below, I comment my suggestions regarding to this:</p> <ol style="list-style-type: none">1. I am not very sure if you are going to carry out a realistic review or a realistic evaluation. I think that it is the latter (and I find this more appropriate).2. I do not agree with the authors with the fact that "ethical approval is not required". If you are going to involve stakeholders as participants of your study, then you should ask for ethical approval and follow ethical principles.3. The method in abstract is more clear than in the body text. Engaging stakeholders is part of step 5, but this is not clear in the method.4. Article summary: limitations are not described.5. You should be more strong with the argument of using a realistic approach. You should put example of what context-mechanism-outcome configurations are expected.6. You must include a flowchart and a timeline of your work, it is not clear in which phase is currently the study. Sometimes you use the past form to describe the work and other times the future forms. This is not clear.7. To define the keywords, did you consider using thesaurus and other databases as Embase?8. It is not clear how and where exploratory searches were conducted.9. Appendix/supplementary doc was not found.10. For search for evidence, did you consider using WOS? Explain which non-reference journals and websites were used. Should you use the mechanisms as part of the inclusion criteria?
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	<p>11. Explain or use an example of how you are going to do the data extraction, that is, which pieces of information you are going to extract.</p> <p>12. Explain how and in what extend the stakeholders are going to contribute to this phase. Consider the ethical issues of involvement them as participants in the study.</p> <p>13. It is not clear how the dat analysis is going to be done to reien the programme theory.</p> <p>14. Update of references is needed.</p> <p>15. Figure 1: Why did you select those theories and not others? Please, justify your election.</p> <p>16. Figure 2: Which is the role of the theories in these draft? Moreover, I am not clarea about the difference between mechanisms and outcomes, are attitude and knowledge mechanisms or outcomes? You should define clearly them. Is there any order in the presented mechanisms? Please, describe the initials.</p>
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REVIEWER NAME	Nurmansyah, Mochamad
REVIEWER AFFILIATION	Universitas Islam Negeri Syarif Hidayatullah Jakarta
REVIEWER CONFLICT OF INTEREST	I have no conflict of interest.
DATE REVIEW RETURNED	16-Feb-2024

GENERAL COMMENTS	<p>This study is interesting and important to carry out considering that current technological developments allow health educators to choose animation as a tool in health education. Indeed, this is not only related to convenience and trends, but various conditions need to be considered and met so that animation becomes an effective (and efficient) type of media in improving health behavior.</p> <p>Introduction: There is a missing link between preventing ill health and diseases and communication as strategy to prevent it. What are risk factors of preventable diseases? Health behaviors? Please justify that health risk behaviors have risen globally and put why communication could be the needed tool?</p> <p>Are there any similar previous studies? how the study contribute to existing understanding of this area?</p> <p>Method: Explanation about why realist synthesis was considered the most appropriate method to use has not been discussed.</p> <p>Step 2 - Type of studies is this study include review study?</p> <p>year limitation for the search? no? why?</p> <p>What information that will be extracted? author, year, design, population etc. should be discussed.</p> <p>Does author will create a table and diagram for presenting the results as this reference https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-05129-1 did? Please explain a bit in the analysis and synthesis process.</p>
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VERSION 1 – AUTHOR RESPONSE

Response to comments from Reviewer 1

Comment 1: Thank you for giving me the opportunity of reviewing your manuscript. I find the topic interesting and relevant and your work could contribute to the current literature. However, there are some aspects that could improve the methodology and the presentation of your manuscript.

Response: Thank you for your positive comments on the review. We have considered each of your constructive comments and suggestions for improvement and have made revisions to the manuscript accordingly.

Comment 2: I am not very sure if you are going to carry out a realist review or a realistic evaluation. I think that it is the latter (and I find this more appropriate).

Response: We are conducting a realist review. Realist evaluation is a process that gathers primary data, whereas in a realist review, the data comes from documents and is therefore secondary research. We are not gathering primary data, but reviewing existing evidence.

https://www.ramesesproject.org/media/RAMESES_II_RE_RS_RR_whats_in_a_name.pdf

Comment 3: I do not agree with the authors with the fact that "ethical approval is not required". If you are going to involve stakeholders as participants of your study, then you should ask for ethical approval and follow ethical principles.

Response: We have clarified in the abstract and the Methods that ethical approval will be sought for different components of stakeholder work as required. We consulted our Research Ethics Committee about the planned stakeholder involvement work with professionals to test and refine the initial programme theory, and it was confirmed as not requiring ethical approval as the activities do not constitute research. The stakeholder workshops with members of the public that we are planning, will also use co-design research techniques to elicit information to help inform the design of future health animations and, therefore, we will first obtain ethical approval:

"The professional stakeholder involvement work does not require ethical approval, as confirmed by Northumbria University Research Ethics Committee, but informed participation will be sought.

We will also explore possibilities to conduct stakeholder workshops with members of the public and community groups in the UK. We will work with them to sense check our refined programme theory and to co-design recommendations for the future design of health animations. Northumbria University Research Ethics Committee Ethical approval for this work will be obtained."

Comment 4: The method in abstract is more clear than in the body text. Engaging stakeholders is part of step 5, but this is not clear in the method.

Response: The nature of realist review allows for engagement with stakeholders at multiple points in the course of the review. This engagement may happen before, during or after data synthesis and may trigger new searches and moving between different stages of the review due to the iterative nature of realist reviews (Pawson et al., 2005). We have described the planned stakeholder work in the Ethics and Dissemination section (page 8-9) so as not to be constrained to having to conduct it in a particular stage and to position it alongside dissemination of the findings which will involve stakeholders.

Comment 5: Article summary: limitations are not described.

Response: We have revised the fifth bullet point in the article summary to emphasise the limitations of the study:

“There is a modest literature pool in this emerging field, necessitating the use of broad inclusion criteria to capture the breadth of animation types and uses.”

Comment 6: You should be more strong with the argument of using a realistic approach. You should put example of what context-mechanism-outcome configurations are expected.

Response: The heterogeneity of evidence and contextual complexity of health animations lend themselves to a realist approach. At the time of writing, data extraction had not begun and therefore no configurations were hypothesized, however, we have added the following sentence to the introduction (page 5) for some clarification:

“When considering context-mechanism-outcome configurations, a useful heuristic can be to ask ‘if, then, because’ where ‘if’ identifies the context, ‘then’ the outcome, and ‘because’ the mechanism²⁵.”

Comment 7: You must include a flowchart and a timeline of your work, it is not clear in which phase is currently the study. Sometimes you use the past form to describe the work and other times the future forms. This is not clear.

Response: We have now included a figure detailing the review stages with a timeline (see Figure 1). As the review is ongoing, some work was in the past and some is in the future.

Comment 8: To define the keywords, did you consider using thesaurus and other databases as embase?

Response: The exploratory searches were conducted to quickly ascertain the size of the evidence base, to establish the feasibility of the review and to refine the research question. For that reason, we searched PubMed and Google Scholar using the most common terms from the literature. Our full search was comprehensive using multiple databases including EMBASE. The search strategy was designed and executed by an experienced information specialist (LE).

Comment 9: It is not clear how and where exploratory searches were conducted.

Response: Please see our response to comment 7.

Comment 10: Appendix/supplementary doc was not found.

Response: Thank you for alerting us to the omission of this document, which is now included as a supplementary file.

Comment 11: For search for evidence, did you consider using WOS? Explain which non-reference journals and websites were used. Should you use the mechanisms as part of the inclusion criteria?

Response: Thank you, your question about WoS has alerted us to a typographical error in the list of databases searched where we had listed Scopus twice and missed off WoS, which we did search. WoS is now included in the list of databases on page 6. In addition to the primary search for evidence, we also searched NGO and other websites, such as the WHO, UNICEF, and CDC. We have added this detail on page 6:

“We are also contacting known academic experts and searching organisation websites, such as the World Health Organization, UNICEF and the Centres for Disease Control and Prevention and relevant non-governmental organisations to identify other published and grey literature (unpublished reports or documents).”

In response to your question about using mechanisms as part of the inclusion criteria, we have not done this as it may have acted as an undesired limitation or restriction. Mechanisms are hidden, causal forces, which are context dependent, and sometimes the mechanisms that arise may be different to those hypothesised.

Comment 12: Explain or use an example of how you are going to do the data extraction, that is, which pieces of information you are going to extract.

Response: The data extraction forms include categories such as: study sample, outcomes, findings, animation characteristics (length, use of colour, language, sound etc). We have clarified this on page 8:

“Data extraction will focus on data that support developing the initial programme theory and CMOCs, including information about the characteristics of the animations (length and use of colour, language, sound, characters etc.) and the study sample, outcomes, findings and quality.”

Comment 13: Explain how and in what extent the stakeholders are going to contribute to this phase. Consider the ethical issues of involvement them as participants in the study.

Response: Please see our response to comments 3 and 4.

Comment 14: It is not clear how the data analysis is going to be done to refine the programme theory.

Response: The refining of the programme theory will happen as part of conversations between the review team, where we will interrogate evidence and consider the CMOCs according to realist review methodology. We have added the following detail on page 8:

“We will conduct data synthesis and theory refinement as part of conversations between the review team. We will interrogate evidence and to question the programme theory integrity by considering interpretations and judgements about data whilst recognising the appraisal of relevance, richness, and rigour conducted in step 3.”

Comment 15: Update of references is needed.

Response: References have been updated.

Comment 16: Figure 1: Why did you select those theories and not others? Please, justify your selection.

Response: The theories selected are leading theories in the range of disciplines displayed as relating to the review question. The review's multidisciplinary team guided the choice. This is not an exhaustive list but rather a few theories from within each discipline, displayed to offer examples of the potential theories.

Comment 17: Figure 2: Which is the role of the theories in these draft? Moreover, I am not clear about the difference between mechanisms and outcomes, are attitude and knowledge mechanisms or outcomes? You should define clearly them. Is there any order in the presented mechanisms? Please, describe the initials.

Response: Mechanisms are hidden causal forces that are context-sensitive (i.e. modelling, self-efficacy, etc.). Outcomes may or may not be observable, but are what an intervention attempts to modify, such as knowledge and attitudes, but also behaviours measured as vaccination rates or smoking cessation, for example. There is no order in the presentation of the mechanisms, the figure has been revised (see Figure 3) to use alphabetical order and the initials have been removed.

Response to comments from Reviewer 2

Comment 1: This study is interesting and important to carry out considering that current technological developments allow health educators to choose animation as a tool in health education. Indeed, this is not only related to convenience and trends, but various conditions need to be considered and met so that animation becomes an effective (and efficient) type of media in improving health behavior.

Response: Thank you for your positive comments on the importance of this review and we are pleased that you find it interesting.

Comment 2: Introduction: There is a missing link between preventing ill health and diseases and communication as strategy to prevent it. What are risk factors of preventable diseases? Health behaviors? Please justify that health risk behaviors have risen globally and put why communication could be the needed tool?

Response: Thank you for this helpful observation. We have added the following sentence on page 3:

“Modifiable behavioural risk factors such as sedentary behaviour, unhealthy diet, not attending health screenings and high-risk sexual behaviours contribute to the increasing global burden of ill health and disease⁴”.

Comment 3: Are there any similar previous studies? how the study contribute to existing understanding of this area?

Response: We are aware of one systematic review of video animations as information tools for patients and the public (Moe-Byrne et al. 2022) which is discussed on page 4. We have also become aware of a meta-analytic review of animated videos to increase patient knowledge (Feeley et al. 2023) which we have now discussed on page 4:

“Similarly, a recent review and meta-analysis of the effectiveness of animated videos on patient learning concluded that animated videos can improve patient knowledge over a range of health and clinical contexts²¹.”

Comment 4: Method: Explanation about why realist synthesis was considered the most appropriate method to use has not been discussed.

Response: We have provided the reason for using a realist review approach on page 5, namely to understand why, how, for whom, to what extent, and in which contexts health animations are expected to produce their effects. In this way, we will not consider health animations to be uniform but rather identify the underlying and context-sensitive causal mechanisms and the specific outcome(s) affected by these mechanisms.

Comment 5: Step 2 - Type of studies: is this study include review study? year limitation for the search? no? why?

Response: Yes, we included all study designs including reviews (page 7 inclusion criteria).

We did not limit our search by date and searched the databases from inception (page 6, step 2). We recognise that animations are relatively recent formats for health communication associated with digital advances, but our initial exploratory searches suggested that the literature pool would be modest, and we wanted to ensure that we did not neglect to include any relevant studies by imposing a potentially inaccurate search start date.

Comment 6: What information that will be extracted? author, year, design, population etc. should be discussed.

Response: The data extraction forms include categories such as: study sample, outcomes, findings, animation characteristics (length, use of colour, language, sound etc). We have clarified this on page 8:

“Data extraction will focus on data that support developing the initial programme theory and CMOCs, including information about the characteristics of the animations (length and use of colour, language, sound, characters etc.) and the study sample, outcomes, findings and quality.”

Comment 7: Does author will create a table and diagram for presenting the results as this reference <https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-020-05129-1> did?

Response: Yes, we intend to produce some illustrations of the findings.

Comment 8: Please explain a bit in the analysis and synthesis process.

Response: The refining of the programme theory will happen as part of conversations between the review team, where we will interrogate evidence and consider the CMOCs according to realist review methodology. We have added the following detail on page 8:

“We will conduct data synthesis and theory refinement as part of conversations between the review team. We will interrogate evidence and to question the programme theory integrity by considering interpretations and judgements about data whilst recognising the appraisal of relevance, richness, and rigour conducted in step 3.”

Many thanks to both reviewers for providing helpful comments. We hope that the responses are found to be satisfactory. We believe that the revised manuscript represents a significant improvement on that originally submitted and hope that our manuscript may now be accepted for publication in BMJ Open.