

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	Protocol for a systematic review and meta-analysis of culturally adapted internet- and mobile-based health promotion interventions
AUTHORS	Balci, Sumeyye; Spanhel, Kerstin; Sander, Lasse; Baumeister, Harald

VERSION 1 – REVIEW

REVIEWER	Sheyu Li West China Hospital, Sichuan University
REVIEW RETURNED	29-Feb-2020

GENERAL COMMENTS	<p>The study protocol will systematically collect evidence of culturally adapted internet- and mobile-based health promotion interventions. However, the definition of health promotion interventions in this study is not clear. According to the inclusion criteria of the study, health promotion intervention includes healthy eating, physical activity, alcohol consumption, sexual health behavior, and smoking cessation. But why did the authors included these five items, but not others like drinking clean water or using a water closet? Please find some other comments:</p> <ol style="list-style-type: none"> 1. It is not clear of the meaning of "delivered predominantly in the internet or mobile-based setting". 2. Is there any predefined subgroup analyses or sensitivity analyses of the study. 3. The number of PEROSPERO registration is necessary for the manuscript according to the publication policy. 4. A brief discussion including its clinical significance and strength and limitation in the designing level is needed.
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REVIEWER	Tom Baranowski Dept Pediatrics Children's Nutrition Research Center Baylor College of Medicine Texas USA
REVIEW RETURNED	18-Mar-2020

GENERAL COMMENTS	<p>point 4: The authors should present a table for summarizing the objectives, methods and outcomes of each study included.</p> <p>point 7: The manuscript would benefit from a more detailed presentation of the statistics for the meta analysis.</p> <p>There have been numerous systematic reviews of the internet and mobile based health promotion interventions that have been published in the last few years. How will the world benefit from</p>
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	<p>another review of this literature? Near the end of the Introduction please provide a brief overview of these reviews, what missing piece your review provides, and why that is important.</p> <p>The first 2 or so paragraphs addressing health inequalities seems tangential to the rest of the manuscript where it is not mentioned again. Cultural adaptation can be conducted for non-low-income populations and cultural adaptation does not necessarily address health inequalities. Furthermore the review is not restricted to studies of lower income populations. Seems reference to inequalities should be deleted.</p>
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VERSION 1 – AUTHOR RESPONSE

Reviewer #1:

Please state any competing interests or state 'None declared': None declared

Answer: Changes are made.

1. The study protocol will systematically collect evidence of culturally adapted internet- and mobile-based health promotion interventions. However, the definition of health promotion interventions in this study is not clear. According to the inclusion criteria of the study, health promotion intervention includes healthy eating, physical activity, alcohol consumption, sexual health behavior, and smoking cessation. But why did the authors included these five items, but not others like drinking clean water or using a water closet?

Answer: Thank you for this important question. A definition of health promotion and the rationale behind the inclusion of the above-mentioned interventions have been included in the manuscript as: "The interventions addressing the following health promotion topics will be included: healthy eating, physical activity, alcohol consumption, sexual health behavior, and smoking cessation. These health promotion areas are endorsed by WHO to improve overall health and fight against the development of NCDs and can be effectively delivered online [21,38]. Health promotion refers to a process which constitutes efforts to enhance overall health and manage its determinants and risk factors [63]."

Certainly, there are plenty of further potential health promotion topics, which could be worth further systematic reviews. Our review focusses on these five regularly emphasized and frequently examined health behavior topics in order to keep this already broad review focused.

2. It is not clear of the meaning of "delivered predominantly in the internet or mobile-based setting".

Answer: We thank the reviewers for pointing out this potential source of confusion for the reader.

"delivered predominantly in the internet or mobile-based setting" is operationalized as:

"Furthermore, the intervention has to be delivered predominantly or completely in an Internet- and/or mobile-based setting. By that, we understand the majority (>%50) of the content of the intervention has been delivered via the internet and mobile technologies.

3. Is there any predefined subgroup analyses or sensitivity analyses of the study?

Answer: Thank you for this question. Possible subgroup and sensitivity analyses have been described in the manuscript as:

"In the presence of substantial heterogeneity, we will conduct subgroup analyses to explore possible sources of heterogeneity. If we have sufficient data, subgroup analyses will be conducted across studies based on: population (healthy versus diagnosed), duration of the intervention, technology (internet versus app/mobile-based), and presence of guidance. Sensitivity analyses will be conducted

to explore the impact of the risk of bias on study findings. Studies rated as high risk of bias will be excluded and the meta-analysis will be conducted again.”.

4. The number of PROSPERO registration is necessary for the manuscript according to the publication policy.

Answer: Thank you very much for this comment. By the time of submission, we were still expecting the completion of our PROSPERO registration and we have now added the PROSPERO number to the manuscript.

5. A brief discussion including its clinical significance and strength and limitation in the designing level is needed.

Answer: Thank you very much for this comment. A chapter entitled `Discussion` has been added to the manuscript as:

“The present planned review is the first to explore the effectiveness of culturally adapted IMIs concerning health promotion interventions and will address a significant lack of research concerning the cultural adaptation of IMIs. It is expected to inform future research by providing a summary of the literature in this area and describing the features of existing culturally adapted IMIs. Moreover, this review might communicate practices whether culturally adapting IMIs is a necessary effort to make and may guide future investment. Nonetheless, due to the expected heterogeneity of effects across studies, the findings from this review should be treated with caution.”.

Reviewer #2:

1. The authors should present a table for summarizing the objectives, methods and outcomes of each study included.

Answer: We will present a table summarizing the objectives, methods, and outcomes of each study included. We added this to the “data analysis section.

2. The manuscript would benefit from a more detailed presentation of the statistics for the meta analysis.

Answer: Thank you very much for this helpful comment. More details regarding the meta-analysis have been added to the manuscript as:

“Review Manager 5 will be used to conduct the analysis [66]. In the case of multiple outcome measures reported for one primary outcome, then we will use the objective measure over subjective measures. Post-intervention scores of intervention and control groups will be used to calculate the between-group effect sizes of each study. For each outcome domain, the meta-analytical effect will be calculated with standardized mean differences and 95% confidence intervals for continuous outcomes, whereas for dichotomous outcomes, odds ratios will be used. The effect sizes will be descriptively categorized according to Cohen’s rule of thumb with $d=0.20$ considered a small effect, $d= 0.50$ a medium effect and $d=0.80$ a large effect [67].”

3. There have been numerous systematic reviews of the internet and mobile based health promotion interventions that have been published in the last few years. How will the world benefit from another review of this literature? Near the end of the Introduction please provide a brief overview of these reviews, what missing piece your review provides, and why that is important.

Answer: Thank you very much for this helpful comment. We agree that there are already plenty of reviews available and we thus appreciate your concern of repetitive research. However, no review has ever focused on the important topic of “cultural adaptation” of these interventions. A rationale for conducting this review has been highlighted in the manuscript as:

“Internet- and mobile-based interventions (IMIs) are used to enhance health behavior promotion and resulted in promising positive effects for general and minority populations [34–37]. According to these reviews, IMIs concerning health promotion are potentially effective in altering lifestyle factors and sporting medical treatments [37,38], health behavior change[34,36], losing weight[35,39], HIV prevention[40], cardiovascular disease prevention[41], smoking cessation[42] and physical activity[43].

Unlike previous reviews, we aim to investigate in a systematic review and meta-analysis whether IMIs can be provided effectively to diverse populations if they are culturally adapted.”

4. The first 2 or so paragraphs addressing health inequalities seems tangential to the rest of the manuscript where it is not mentioned again. Cultural adaptation can be conducted for non-low-income populations and cultural adaptation does not necessarily address health inequalities. Furthermore the review is not restricted to studies of lower income populations. Seems reference to inequalities should be deleted.

Answer: Thank you very much for this helpful comment. The introduction section has been adapted according to this comment.

We thank all reviewers for their helpful comments!

VERSION 2 – REVIEW

REVIEWER	Tom Baranowski Baylor College of Medicine, Houston, Texas, United States
REVIEW RETURNED	16-Jul-2020
GENERAL COMMENTS	none