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)	Engaging older people in an Internet platform for cardiovascular risk self-management: a qualitative study among Dutch HATICE participants
AUTHORS	Van Middelaar, Tessa; Beishuizen, Cathrien; Guillemont, Juliette; Barbera, Mariagnese; Richard, Edo; Moll van Charante, Eric

VERSION 1 – REVIEW

REVIEWER	Ilse CS Swinkels Senior researcher NIVEL, Netherlands
REVIEW RETURNED	09-Oct-2017

GENERAL COMMENTS	Thank you for asking me to review this interesting paper. The manuscript shows which factors are associated with the use of an interactive internet platform for cardiovascular self-management based on a qualitative study. The authors made a distinction between initial and sustained engagement, which I appreciated very much. However, I do have some suggestions for further improvement of the manuscript and I have two main concerns. My main concerns are the lack of theoretical models in the manuscript and the fact that two of the interviewers were involved in the development and maintenance of the platform. Let me explain: 1. as far as I can see no theoretically model was used for developing the interview guide, nor for coding and analyzing the results, nor for explaining and discussing the results. A lot of research on using of and engagement to eHealth-tools is already available. It would have been worthwhile when this was used when designing this study. But, now that stage is passes, at least it can be used in interpreting the results and in explaining the readers what is new in this manuscript. What do the authors add to existing literature on these topics? 2. in the limitations section the authors fairly state that two of them were involved in the development and maintenance of the platform. The interviewees were not aware of this, which is good, but the authors' involvement can also have influences the coding and analyzing of the transcripts. What did the authors do to guarantee an independent analyses? Other concerns or suggestions: • It would have helped me when the role of the 'coach' was introduced in the design or objectives section of the abstract.

	• Elaborating on my first main concern, I would have expected some more existing literature on factors related to the use of eHealth-tools in the introduction. As far as I know, the distinction between initial and sustained engagement is new. I encourage the authors to better ground their aims. • In the results section, I do have questions concerning the classification of different topics. E.g. 'appropriateness of the interventions': to my opinion this part handles two different things. The first paragraph (lines 27-40) handles the usefulness in general. The second part, lines 41 and on, handles the perceived advantages or benefits which are related to the diseases and the stage of change. Another example: page 10 'coach: long-term relationship of trust'. In line 40 it is stated that when a participant felt connected to the coach, this was positively associated with sustained use. However in lines 53-55, this is contradicted. So, what is the message here? A third example: p 13 'incorporating into personal life', lines 14-18: the statement about regularly visiting a health professionals is not related to incorporating into personal life, it is about experienced need or advantage. And to my opinion, time-consuming does not fit well in this topic either. • The topic 'future implementation' came by surprise. I believe it would be better to introduce this in the introduction and methods. • As mentioned above, to my opinion your results show that sustained used is associated with perceived advantages. I miss this topic in your results and the first part of the discussion. Implicit it is mentioned in lines 55-57 on page 15, when talking about people unaware or unmotivated for lifestyle change. Would it be possible to connect these things?

REVIEWER	Peter Hanlon University of Glasgow UK
REVIEW RETURNED	17-Oct-2017

GENERAL COMMENTS	Thank you for the opportunity to review this paper, which presents an interesting and informative analysis of a qualitative evaluation of an internet-based self-management platform for cardiovascular risk. On the whole the article is clear and well written, however may benefit from consideration of a few points. In particular the contextualisation of some of the findings within the broader self-management literature would strengthen the paper. 1. The term eHealth is used in the introduction without being specifically defined. While it is clear from the context, in such a rapidly developing and expanding field definitions change and vary between publications. A brief definition may be appropriate. 2. The literature around eHealth for self-management has advanced considerably since the systematic review referenced in reference 6. A more up-to-date citation should be included. 3. Could the authors provide some detail as to the theoretical underpinning of the HATICE study ('stages of change model is mentioned in the discussion'). Was there an intended means by which 'self-management' would be promoted. Did this inform the interview topic guide?

	4. Self-management itself is a broad ranging concept, and its support can take many forms. For example, the PRISMS taxonomy for self-management support recently sought to describe in a more structured way the means by which self-management interventions may be effective. Several features of the programme are eluded to which describe a range of domains (to use PRISMS as an example). A brief description of the intervention with reference to the self-management literature would perhaps strengthen the paper. 5. The authors mention the timely answering of messages as a factor promoting the use of the programme (page 9), and conversely those not answered may discourage use. The importance of the 'coach' in promoting activity was also highlighted. Was there any sense in which the programme led to a dependency among the participants rather than encouraging them to take responsibility for their own health. This concern was raised in some qualitative evaluation of the 'Light-touch' programme for remote monitoring of hypertension, for example. The extent to which true 'self-management' was achieved (e.g. by Schermer's model of self-management) might be worth considering, and may add to the discussion.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Ilse CS Swinkels
Institution and Country: Senior researcher, NIVEL, Netherlands
Please state any competing interests: None declared

Please leave your comments for the authors below

Thank you for asking me to review this interesting paper. The manuscript shows which factors are associated with the use of an interactive internet platform for cardiovascular self-management based on a qualitative study. The authors made a distinction between initial and sustained engagement, which I appreciated very much. However, I do have some suggestions for further improvement of the manuscript and I have two main concerns.

My main concerns are the lack of theoretical models in the manuscript and the fact that two of the interviewers were involved in the development and maintenance of the platform. Let me explain:

1. as far as I can see no theoretically model was used for developing the interview guide, nor for coding and analyzing the results, nor for explaining and discussing the results. A lot of research on using of and engagement to eHealth-tools is already available. It would have been worthwhile when this was used when designing this study. But, now that stage is passes, at least it can be used in interpreting the results and in explaining the readers what is new in this manuscript. What do the authors add to existing literature on these topics?

Response: We would like to thank dr. Swinkels for her comments. The HATICE platform was designed based on the Bandura's social-cognitive theory and the trans-theoretical model. Therefore, we interpreted our results in light of the theories used in the study design. We have adapted the text in the following manner:

Page 6, lines 128-130: “The intervention is based on Bandura’s social-cognitive theory for self-management and behaviour change and incorporated Michie’s taxonomy for standardised definitions of behaviour change interventions.”
Page 16-17, lines 399-402: “Nevertheless, a complete in-person approach might be preferable for participants in the pre-contemplation phase, when there is no intention to change behaviour, as even reading information about cardiovascular risk on the platform requires some level of initiative.”
Page 17, lines 405-410: “However, it is uncertain whether this reactive approach sufficiently supports self-efficacy. In line with the degrees of self-management proposed by Schermer this might be seen as compliant self-management. Even though the interactive and flexible quality of the HATICE platform facilitates adoption of concordant self-management, i.e. when a person has incorporated the lifestyle advice into his/her personal life, this is not employed by everyone.”
Page 17, lines 423-425: “As suggested by Bandura et al. it might be useful to tailor the platform content and the way it is provided based on a participants readiness to change.”

In addition, we added information on what is already known to the introduction.
Page 5, lines 102-104: “Previous research on eHealth interventions identified several important influential factors of engagement; personal motivation, incorporation into personal life, and quality of the eHealth intervention.”

Furthermore, we clarified the similarities and differences of our findings in relation to previous literature in discussion.
Page 16, lines 385-389: “Part of our results are in line with previous studies on engagement with eHealth interventions, such as on the influence of usability, perceived benefit and expectations of the intervention and the incorporation into personal life. A new finding that is especially relevant for eHealth interventions on cardiovascular prevention is the crucial role of continuous support by a coach for sustained engagement.”

2. in the limitations section the authors fairly state that two of them were involved in the development and maintenance of the platform. The interviewees were not aware of this, which is good, but the authors’ involvement can also have influences the coding and analyzing of the transcripts. What did the authors do to guarantee an independent analyses?

Response: In all phases of the study, the authors held regular meetings to discuss the findings. During these discussions the two initial analysing researchers were made aware of any potential influences their involvement might have. This was added to the methods and discussion section of the manuscript.
Page 8, lines 172-174: “At several points during the analysis process results were discussed with other team members to ensure independent interpretation.”
And:
Page 16, lines 381-382: “Independent analysis was ensured by incorporation of several analysis rounds with other team members.”

Other concerns or suggestions:
• It would have helped me when the role of the ‘coach’ was introduced in the design or objectives section of the abstract.

Response: We added the support of a coach to the participants section of the abstract.
Page 2, lines 33-35: “People ≥65 years with an increased risk of cardiovascular disease who used the ‘Healthy Ageing Through Internet Counselling in the Elderly’ (HATICE) Internet platform with remote support of a coach.”

• Elaborating on my first main concern, I would have expected some more existing literature on factors related to the use of eHealth-tools in the introduction. As far as I know, the distinction between initial and sustained engagement is new. I encourage the authors to better ground their aims.

Response: As stated above, to better incorporate our findings in existing literature we have added results of a recent systematic review of O'Connor et al. to our introduction and highlighted the potential additive value of our study to existing literature by focusing on sustained engagement and older adults.
Page 5, lines 103-111: "Previous research on eHealth interventions identified several important influential factors of engagement; personal motivation, incorporation into personal life, and quality of the eHealth intervention. However, it is unclear whether these are the same for initial and sustained engagement. For cardiovascular prevention, sustained engagement seems crucial, as the effectiveness of eHealth interventions on cardiovascular risk factors declines over time, especially after one year follow-up. Also, an eHealth intervention specifically targeted at older people should have a specific age-friendly design."

• In the results section, I do have questions concerning the classification of different topics. E.g. 'appropriateness of the interventions': to my opinion this part handles two different things. The first paragraph (lines 27-40) handles the usefulness in general. The second part, lines 41 and on, handles the perceived advantages or benefits which are related to the diseases and the stage of change.

Another example: page 10 'coach: long-term relationship of trust'. In line 40 it is stated that when a participant felt connected to the coach, this was positively associated with sustained use. However in lines 53-55, this is contradicted. So, what is the message here? A third example: p 13 'incorporating into personal life', lines 14-18: the statement about regularly visiting a health professionals is not related to incorporating into personal life, it is about experienced need or advantage. And to my opinion, time-consuming does not fit well in this topic either.
The reviewer correctly noticed that it was sometimes difficult to combine results into clearly defined and titled paragraphs. We changed the title 'appropriateness of the intervention' to 'usefulness and perceived benefit of the intervention' to identify the content of the paragraph more clearly (page 10, line 221).

Response: We elaborated on the apparent contradiction regarding the influence of the coach in sustained platform use. Overall, participants mentioned the coach was crucial for sustained engagement, however, in one participant a change in coach did not change overall platform use, although it was considered a negative experience.
Page 11, lines 261-263: "One interviewee had experienced a change in coach during the trial. He stated this did not clearly change his platform use, although it did negatively impact his connection with the coach."
We moved the statement about regular visits to health care professionals to the paragraph on 'usefulness and perceived benefit of the intervention' as this was deemed more appropriate.
Page 10, lines 243-245: "Participants who already frequently visited their health care professional(s) stated they did not expect important additional benefit."
The statement on the time-consuming quality of the platform fitted better in the paragraph by changing its title into 'incorporation into daily routines' (page 13, line 301).

• The topic 'future implementation' came by surprise. I believe it would be better to introduce this in the introduction and methods.

Response: In line with this suggestion we have clarified our secondary aim regarding future implementation in the introduction and methods section of the manuscript:
Page 5, lines 111-113: “It is important to assess the views of end users of an eHealth intervention to improve its chances of successful implementation.”
Page 7, lines 157-159: “The final part of the interview guide focused on the interaction with regular care, during which participants were asked if they preferred the platform to be incorporated in primary health care.”

• As mentioned above, to my opinion your results show that sustained used is associated with perceived advantages. I miss this topic in your results and the first part of the discussion. Implicit it is mentioned in lines 55-57 on page 15, when talking about people unaware or unmotivated for lifestyle change. Would it be possible to connect these things?

Response: We have increased the focus on this topic by changing the title of the paragraph on perceived benefit (page 10, line 221) and the phrasing in the summary.
Page 15, lines 358-361: “Factors associated with initial platform engagement are perceived computer literacy, usability and anticipated benefits of the platform, with special attention to the computer skills and preferences of older people.”
We assessed this finding in light of the trans-theoretical model in the discussion.
Page 16, lines 395-397: “Despite the use of motivational interviewing techniques and coaches following the trans-theoretical model, it was difficult to engage people with a low perceived benefit of the intervention.”

Reviewer: 2
Reviewer Name: Peter Hanlon
Institution and Country: University of Glasgow, UK
Please state any competing interests: None declared

Please leave your comments for the authors below
Thank you for the opportunity to review this paper, which presents an interesting and informative analysis of a qualitative evaluation of an internet-based self-management platform for cardiovascular risk.

On the whole the article is clear and well written, however may benefit from consideration of a few points. In particular the contextualisation of some of the findings within the broader self-management literature would strengthen the paper.

1. The term eHealth is used in the introduction without being specifically defined. While it is clear from the context, in such a rapidly developing and expanding field definitions change and vary between publications. A brief definition may be appropriate.

Response: We would like to thank dr. Hanlon for his constructive comments. We have included (a part of) the definition of Pagliari et al., which was part of a series on the discussion on definitions of eHealth, in the introduction section of the manuscript.
Page 5, lines 98-99: “eHealth, i.e. a method to deliver health services and information using the Internet and related technologies, is a promising tool for delivery of prevention.”

2. The literature around eHealth for self-management has advanced considerably since the systematic review referenced in reference 6. A more up-to-date citation should be included.

Response: We have updated the citation as suggested (page 5, line 101).

3. Could the authors provide some detail as to the theoretical underpinning of the HATICE study ('stages of change model is mentioned in the discussion'). Was there an intended means by which 'self-management' would be promoted. Did this inform the interview topic guide?
The theoretical underpinning of the HATICE intervention is added to the methods sections.
Page 6, lines 128-132: “The intervention is based on Bandura’s social-cognitive theory for self-management and behaviour change and incorporated Michie’s taxonomy for standardised definitions of behaviour change interventions. The platform offers blended care by remote support of a health-coach trained in motivational interviewing techniques and the trans-theoretical (or stages of change) model.”

Response: This underlying theoretical framework also fed into the interview guide. Also, we reflected on our findings in the discussion using these frameworks (as also previously stated; page 16-17, lines 395-402; page 17, lines 405-406; page 17, 423-425).

4. Self-management itself is a broad ranging concept, and its support can take many forms. For example, the PRISMS taxonomy for self-management support recently sought to describe in a more structured way the means by which self-management interventions may be effective. Several features of the programme are eluded to which describe a range of domains (to use PRISMS as an example). A brief description of the intervention with reference to the self-management literature would perhaps strengthen the paper.

Response: During the design of the HATICE intervention we used Michie’s taxonomy for standardiaed definitions of behaviour change interventions and we suggest to use this to reference to the self-management literature.
Page 6, line 128-130: “The intervention is based on Bandura’s social-cognitive theory for self-management and behaviour change and incorporated Michie’s taxonomy for standardized definitions of behaviour change interventions.“

5. The authors mention the timely answering of messages as a factor promoting the use of the programme (page 9), and conversely those not answered may discourage use. The importance of the 'coach' in promoting activity was also highlighted. Was there any sense in which the programme led to a dependency among the participants rather than encouraging them to take responsibility for their own health. This concern was raised in some qualitative evaluation of the 'Light-touch' programme for remote monitoring of hypertension, for example. The extent to which true 'self-management' was achieved (e.g. by Schermer's model of self-management) might be worth considering, and may add to the discussion.

Response: Thank you for this nice suggestion to extend the discussion and for pointing out the interesting paper by prof. Schermer. We have added this to our discussion.
Page 17, lines 402-410: “A reactive approach, i.e. responding to automatic and personal reminders, rather than a proactive approach seemed to suit most participants best. Previous studies have shown that electronic reminders are a useful tool to increase medication adherence. However, it is uncertain whether this reactive approach sufficiently supports self-efficacy. In line with the degrees of self-management proposed by Schermer this might be seen as compliant self-management. Even though the interactive and flexible quality of the HATICE platform facilitates adoption of concordant self-management, i.e. incorporation of the lifestyle advice into their personal life, this is not employed by everyone.”

VERSION 2 – REVIEW

REVIEWER	Ilse Swinkels Nivel, Utrecht, the Netherlands
REVIEW RETURNED	26-Nov-2017

GENERAL COMMENTS	The authors did a good job in revising the paper. It is an interesting manuscript with relevant information on the use of ICT in healthcare. I do not have any other suggestions.

REVIEWER	Peter Hanlon University of Glasgow, UK
REVIEW RETURNED	23-Nov-2017

GENERAL COMMENTS	Thank you for the opportunity to review this revision. I agree with the author's response to my initial comments as well as those of the other reviewer. Particularly the theoretical basis for the study and its findings are much clearer.