Reviewer’s report

Title: Design and evaluation of a mobile application to assist the self-monitoring of the chronic kidney disease in developing countries

Version: 0 Date: 22 Sep 2017

Reviewer: Maddalena Fiordelli

Reviewer's report:

General comments

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This paper addresses a promising topic: the design and evaluation of a mobile application to assist the self-monitoring of the chronic kidney disease in developing countries. Authors use a user-centered design approach and involve the main stakeholders in the dialogue, also by using CPN tools which are useful for checking safety with the help of doctors. However, I feel the manuscript could be further improved by solving some minor and major issues. I will go through the main problematic points I found in the following.

Specific comments

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Major comments

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1. The App is structured as a medical device, even though it recommends the patient to refer to the doctor in case of risk. I see the main advantages of such a system, especially in developing countries where distance from healthcare services is very problematic. However, since regulations of mobile apps become more and more relevant and strict, I was wondering whether national regulations for such an instrument have been taken into consideration. Which would be practical implications and feasibility issues?

2. It is not yet clear to me how the app have been developed, and all the stages the development went through. How did the development start?

3. Following to the previous point, I am missing information on what happened after evaluation and revision. How are the results informing newer versions? How many versions have been developed and is it now considered ready or should it need further testing?
4. I understand that patients, or even regular citizens, could use the app as a monitor, but what would be the motivation for them to start using it and to perpetrate the usage? The literature is clear in stating that this is one of the main problematic points when it comes to mhealth. Therefore, how could you take into account a benefit/gain to be given to the patients through the app that can encourage their use?

5. Authors mention at the beginning that the app is evidence based, and that well established guidelines have been chosen. They should give more information on the process and criteria for selection of guidelines, and furthermore the involvement of experts. Do the app integrate all guidelines? Was there a choice process?

5. When reporting on K coefficient, authors mentioned some critical points of agreement. Even if they discussed on higher level of agreements in combination with that, and consider the general indicator of agreement as satisfactory I still have some doubts on what made nephrologists disagree. I wonder if the authors have further investigated these issues through a debriefing with doctors.

Minor comments

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1. Authors measures usability with some questions they have prepared. Why not to use some well-established and validated measures for usability?

2. I would appreciate to have some information on the eight subjects involved in the testing. Authors made some considerations based on their socio-demo characteristics, but we still miss the description of the subjects.

3. Remove "useful" from the text. This is too strong and still needs to be proven.

4. Which kind of app is this? A native one?

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes
Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

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