Reviewer's report

Title: Presentation of laboratory test results in patient portals: influence of interface design on risk interpretation and visual search behaviour

Version: 0 Date: 25 Sep 2017

Reviewer: Romaric Marcilly

Reviewer's report:

The paper entitled "presentation of laboratory tests results in patient portals: influence of interface design on risk interpretation and visual search behavior" is well-written in a suitable English. It reports on a study that seems well-conducted. This study aims to compare three modes of presentation of laboratory results ("baseline" already in use, and two other versions "contextualized" and "grouped" that were designed based on insights from the literature). The authors combined mainly two methods (user test and eye-tracking) to assess and explain the potential impact of the interface design on the perceived risk and the behavioral intention of the patient. Results did not highlight any significant influence of the mode of presentation on the risk interpretation.

The manuscript is of good quality in substance and in form. Even if the results are not significant, they are still relevant for publication.

A few points can still be cleared up.

In the method / study population the second paragraph ("Throughout the project...") is about a group of three specific patients who were involved in the development of the different visual presentation types. You do not explain how they were involved (User-Centered Design? focus group? Did you test the usability of the three interfaces with them?) : you just present the three interface types. Could you please shortly explain how those specific patients were involved in the design process? Do you think that involving those patients in the design process may have had an impact on the results ? (e.g. May ensuring a good usability to the three types of interface have leveled the interaction behavior?)

Discussion. Your results highlight the importance of highlighting the pieces of information most relevant for patients. Could you propose tracks to explore in terms of usability / design to improve the perceived importance of those pieces of information?

Method / Discussion. You discuss a very relevant limitation of your paper, the sample size (20 patients). You knew that some patients' characteristics such as health, numeracy, and graph
literacy, internet use and education may be of relevance in the context of lab results interpretation. You even collected data about those characteristics. However, you recruited only 20 participants while it is statistically not sufficient to explore the impact of those variables. Please explain why you did not recruit more participants. Do you consider that the results you get may be generalized to the full population based on the characteristics of your sample? What are the perspectives of your study? Do you intend to consider those individual characteristics in further studies?

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.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable
Declaration of competing interests
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?

3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?

4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?

5. Do you have any other financial competing interests?

6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal