Reviewer's report

Title: Evaluation of electronic patient-reported outcome assessment with cancer patients in the hospital and at home

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Reviewer: Lotte Haverman

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Major Compulsory Revisions

The article “Evaluation of electronic patient-reported outcome assessment with cancer patients in the hospital and at home” reports about the use of CHES in two hospitals in Austria. As far as I can judge, the topic of this manuscript is valuable to researchers and clinicians who do research on PROs in daily clinical practice or people involved in the implementation of PROs. Nevertheless, there are some concerns regarding both form and content.

In my opinion the CHES software is very interesting for collecting ePROs and for using these ePROs in daily clinical practice. This group of authors are using ePROs as part of clinical care and not only as a research project. However, this manuscript and study need to be more clarified in their scientific value. I would suggest making this a more explorative and descriptive paper, without trying to scientifically compare groups. I think it is very interesting and informative to know what choices the authors have made regarding implementation of ePROs.

Overall, the authors present a study which is not very structured, not randomized (quantitative) or fully qualitative and they are not clear about what kind of study design they present?

In addition, the authors focus mainly on implementation barriers on the level of the intervention (mode of administration). In implementation science there are, however, more levels on which barriers can be described (organization, professional, patient). I would suggest to rewrite this manuscript within the scope of implementation science.

Abstract

- It is not clear what the main topic of this research is, what is meant with internet usage? Both groups use internet, so is this study about differences in attitudes towards two ways of collecting ePROs and the differences in feasibility between the two groups? Please specify, the authors use statistical tests to show differences, so I would recommend to also use the word differences. If they make the whole manuscript more descriptive, the aims are sufficient.

- Please provide response rate and information on the mean age of the participants in the abstract.
- The authors could consider to change “such data” to “their data”.
- The results section of the abstract could provide more numeric information and also some examples of the suggestions made by patients.
- Patients preferred the software, to what other options?

Introduction

- I would suggest making the introduction more concise. I think that the authors point on using the internet to collect ePROs is clear and can be discussed in a shortened way.
- I would advice the authors to focus more on the use of PROs in daily clinical care (which they seem to do) without being part of a research environment. I think this makes their CHES software very interesting compare to other ePRO initiatives.
- In the introduction it is not clear if the authors using a scientific approach or a more explorative. Do they combine qualitative and quantitative data?
- I think this research is part of “implementation science”. I would suggest asking an expert on implementation research to also review this manuscript.
- The objectives in the introduction part are too vague. Please be clear whether you are making a comparison between groups or if they use a more descriptive way of conducting analysis.

Methods

- It seems that the authors have more than two groups to compare if I am correct; From the Medical University of Innsbruck: 1 group with clinical ePROs without a choice (evaluation by a structured interview), and from the Kufstein County Hospital: 1 group declining home ePROs so therefore using clinical ePROs, (evaluation by the use of an evaluation form via mail), 1 group using home ePROs via website or app (which could also be different in the use of it; evaluation by the use of evaluation form) and 1 group using home ePROs by the use of weekly phone calls because that is what they prefer (no evaluation). Please make these differences more clear throughout your manuscript. In my opinion there is a lot to say about this study-design (again for me the most important question is, are they presenting a controlled study or are they describing an implementation process), please show all different groups in a table. It might also be clearer to add the numbers in figure 1.
- The differences between internet usage, ePROs, clinical ePROs and home ePROs, new media, PRO assessment software and mobile devices is not always clear.
- There seem to be two big differences between the centers. In one center patients only get the chance to complete ePROs at the clinic, while in the other center patients can choose between the two administration forms (in the clinic or at home). In addition, the way of evaluation is different (structured interview with nurse vs evaluation form via mail). It seems that the differences between the patient population in the two centers are also quite big; older patients (home
e-PRO) vs younger men (clinic e-PRO). Also, the treatment phase is very different between both groups (chemotherapy vs follow-up). This could influence all outcomes. Why would you think that all differences found throughout the manuscript aren’t based on the differences between care and patient population in the two centers? How do the authors justify this? They pay a little attention to this point in the discussion, but why did they choose this study design?

Results

- In my opinion there is no conclusion to make about the differences between the clinical ePRO users and home ePRO users, because a part of the patients was allowed to choose the administration mode of their preference while another part of the patients was not. The differences found are in my opinion all based on coincidence., why did the authors not choose to only describe their findings?

- In line 258 do the authors mean ePROs or PROs? Please clarify.

- Line 289: “At Kufstein County Hospital, 45 patients provided information on their experience with home ePRO.” So please explain, these are not the patients who chose home ePROs by phone. The results about the evaluation of the Home ePRO phone group are lacking because no evaluation has been conducted? This would have been interesting information.

- It is not clear how often patients completed ePROs. Was it only once in both groups (clinic and home). Or did patients complete ePROs before multiple appointments at the clinic? Did this differ between both hospitals? Please provide more information.

Discussion

- In my opinion is the following sentence correct and very interesting: Line 322: “CHES was well accepted and offered a user-friendly as well as feasible system for different assessment settings. In spite of this overall positive feedback, some previously identified implementation barriers of routine ePRO were replicated, and new ideas for further research areas could be generated.” However, to support this statement a more descriptive paper is sufficient, no quantitative data presented in this manuscript is, in my opinion, reliable, so please choose a more qualitative approach and again ask an implementation expert to read this manuscript.

- Why putting this new information in the discussion? Please add to your method if you like to state this here: “as patients who refused ePRO assessments at the Kufstein County Hospital or chose phone calls over home-ePRO were approximately ten years older than home-ePRO participants.”

- Be more careful about using all sorts of definitions random, what do the authors exactly mean by new media?

- Regarding the first limitation, how many iPads were loaned to patients? It would be useful to add this information, to be able to interpret this limitation better.

- I think another limitation is the different administration mode of the evaluation form. The first group answered the questions via an interview with a nurse and the second group at home via email. These different methods could result in a
response bias (patients could answer more socially desirable in an interview).

- More attention should be paid to the discussion of the ePROs. This is a very important step in the implementation process. Are patients more likely to complete ePROs when the results are being discussed by their health care provider? What are the implications for clinical practice?

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests