Reviewer's report

Title: A systematic review of Impact of Routine Collection of Patient Reported Outcome Measures on Patients, Providers and Health Organisations in An Oncologic Setting

Version: 1 Date: 13 December 2012

Reviewer: Daniela C Goncalves

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This is a potentially useful manuscript, which summarises the literature on the routine use of PROMs in oncologic patients, ascertaining their impact on patients, providers, and health organisations. The authors went to great lengths to tabulate and assess the included studies, and provided a theoretical approach as to better integrate their results. However, there were some questions raised while reading the manuscript, which I would like the authors to address.

Major Compulsory Revisions

Introduction

The introduction is considerably short and does not seem to properly introduce the study conducted. For instance, the authors start by describing the construct by presenting two definitions distinct in scope, after which they immediately refer that “alternatives to traditional paper-based instruments” are being developed and validated as a way of overcoming barriers in integrating PROMs in clinical practice. However, not only these barriers are not presented to the reader, but also the authors focus on a very specific aspect of PROMs’ collection, which taps more into their feasibility than their clinical utility. The possible outcomes (“rationales”) of using PROMs in a cancer setting are then introduced, but with no link to what was said before, or without making explicit if the use of PROMs in this specific setting differs from their use in other settings.

Methods

1. The rationale for the current review is not clear to me, in the sense that the authors mention that they have identified “over 200 existing reviews on the same or similar topics (...) identified in a broad search covering PROs and quality of life measures in cancer patients between January 2000 and October 2011”. This is a considerably high number, and it would be useful to know how the authors identified these reviews and what their main findings are. It would also be useful to know, probably in the discussion, what the current review adds to the previously identified 200 reviews.

2. The authors then state that “Three reviews were identified as the baseline reviews for this project”; I would like to know what was the rationale for choosing these three reviews, especially when considering that two of them do not specifically address the use of PROMs in cancer settings.
3. The authors mention backward and forward search for all “over 200 in total” reviews identified, plus the search strategy developed; however, from the PRISMA flow diagram, it is not clear how many references were identified through each method, amongst other details. For instance, where all backward and forward references assessed for the “over 200 in total” reviews?

4. The first inclusion criterion is that “substantial content in presenting empirical evidence on the impact of routinely collected PROs on at least one of the outcomes listed on table 2”; however, in all papers included, including those with an observational design, feedback was provided to the healthcare professional. This becomes even more relevant when it is one of the aspects of the results highlighted by the authors. Was the provision of feedback an inclusion criterion?

Results

1. RCTs, CBAs, survey, and clinical audits provide different levels of evidence regarding an intervention; although the authors acknowledge this, even classifying the studies according to the strength of their design, it does not seem to be mentioned when presenting the results, i.e., they present the level of evidence regardless of study design. This is particularly relevant when considering that one third of all the included studies are observational. Related with this, the authors mention at the top of their results section that the present review identified more studies than previous reviews – would the broad inclusion criteria explain this?

2. Complex interventions have a myriad of components, which often are different from study to study; the impact of routine collection of PROMs can only be ascertained when these are specifically taken into account. The authors properly acknowledge the need for “a comprehensive theoretical model and framework”, and cite Greenhalg and colleagues [1] contribution to the topic, but then fail to address the detailed aspects highlighted, namely the intervention’s design and implementation, the interaction between proximal and distal outcomes, and the outcome criteria considered by the studies included. For instance, previous systematic reviews identified already some aspects underlying the successful implementation of PROMs in clinical practice, including specific training and the timing and structure of feedback, amongst others [2, 3]. In this sense, the current manuscript seems to fall short of identifying the components underlying the successful use of PROMs.

3. Following the previous comment, it would be useful to address how the quality of these studies could have impacted upon the results, as well as to comment on publication bias.

Discussion

1. Could the authors please explain the sentence “Overall, there is reasonable evidence in favouring the hypothesis that implementing a routine collected PROs system brings positive changes to patient management in the settings where a patient management plan is an integral part of routine collected PROs.”

2. The discussion would benefit from a tighter integration of the results obtained by the previous review with those obtained by previous reviews. In this way, the
authors summarise the findings for previous work, but do not seem to integrate both sets of results.

3. It could also be informative to refer to the role of PROMs within the National Health Service in the UK, and how this world-leading initiative might provide information for the routine collection of PROMs. Information has already been collected for a few selected elective surgeries, but other conditions are also being tackled, namely mastectomy and breast cancer, amongst others http://www.ic.nhs.uk/services/national-clinical-audit-support-programme-ncasp/cancer/mastectomy

Minor essential revisions

Methods
1. How come there are two different search strategies? Under which conditions were they used, taking into account only one database was searched?
2. “Patient satisfaction” and “unmet need” address a considerably different construct, when compared with the previous terms used in the same search string; I would like to know the authors’ rationale for including those (and not others), namely when patient satisfaction and needs are more related with PREMs, rather than PROMs.
3. What were the simplified terms used for grey (also spelled as gray in the manuscript) literature?
4. How were “leading researchers and experts” identified?
5. Could the authors please provide a definition of “composite PRO”?
6. Was all data extracted independently by two reviewers? If so, what was the agreement rate?

Results
1. If the date cut off point for inclusion was >1999, shouldn’t Trowbridge et al., (1997) study have been excluded?

Discretionary revisions

Some sentences seem to be missing a verb or idea (e.g., last sentence in the results section of the Abstract; sentence in the Introduction that starts with “Some rationales”)

Methods
1. Shouldn’t step 2 be prior to step 1?
2. The table authors refer to as 2 is listed as 1.

Results
1. Overall, the results would profit from a different presentation; for instance there are at least four outcomes for which no data were found, which could be grouped within a same paragraph, stating that no evidence was found for these.
2. Related with the previous comment, often authors provide comments in the results that would be more adequate for the discussion, e.g., “Although the idea of routine collected PROs may provide better opportunities for services providers (as well as patients) to detect unrecognised problems through growing awareness, improved communication and monitoring seems intuitively plausible.” (p.13).

3. The papers published by Velikova and colleagues report on the same study as the 2004 paper.


**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no financial competing interests.

My research group (HSPRG, University of Oxford) is also conducting a systematic review on the impact of PROMs in clinical practice, which is broader in scope and has different inclusion criteria from the ones employed by Chen and colleagues.