Reviewer's report

Title: Shared decision making when patients consider surgery for lumbar herniated disc: Development and test of a patient decision aid

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Reviewer: Chen Liang

Reviewer's report:

This paper described the development of a decision aid tool (leaflet) with the goal of improving the shared decision making process in Lumbar Disc Herniation (LHD). The lack of decision support on surgery for LHD is an unaddressed problem. Overall the study is well conducted. The methods used in this paper is valid in general but with a few major concerns detailed below. The data can support research questions and conclusion. In addition to the strength, please find my major concerns for authors' reference.

1) A major concern is that the proposed decision aid tool may be less compatible with the fast-growing health information technology, therefore may have reduced potential to inform the state-of-the-art studies in health informatics and clinical decision support. For example, how would the proposed tool be incorporated with electronic health information and integrated health data?

2) The rationale between step 1 and the other steps seems not clear. The result of step 1 suggested that a certain proportion of patients are not engaged in shared decision making. But this finding does not necessarily serve as a strong reason for the following steps (development and testing for the decision aid tool) because the finding didn't suggest that the lack of engagement in shared decision making is caused by the missing decision aid tool. Please justify.

3) There are several mentions of "literature review/search" as part of methods in the manuscript. However, the procedure of literature review is missing. Without a description of how literature review is done, it is inappropriate to discuss what has been found in by the literature review. For example, Line 225, "The literature review helped to assess the effects of surgery versus non-surgery treatment." In Line 302, "In the literature search we were not able to find evidence based exact numbers to present how often symptoms would decrease spontaneously, the risk of permanent nerve-damage with no surgery or how long pain could be expected to last."

4) Since there are multiple steps participants are engaged, it is suggested to clarify whether these participants are repeatedly recruited. This is important information for evaluating the design of 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

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