Reviewer's report

Title: Back pain outcomes in primary care following a practice improvement intervention: a prospective cohort study

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Reviewer: alexis descatha

Reviewer's report:

The authors presented an intervention study on back pain management in primary care in UK. They studied GP interventions, treatments and costs and in parallel the outcome in a small cohort of patients. I feel this trial is very interesting, especially in term of cost and effectiveness.

Major Compulsory Revisions

However, even though I think this manuscript should be clarified to be evaluated around the intervention, the methodology of evaluation, the limits and the conclusion.

My first comment is about the detail of the intervention. To be useful for the physician, clear detail of what the intervention was should be clarified. The COST project gave large broad of recommendations and I think an annex should include the contents of workshops.

My second comment is about the trial. I got confused about the methodology used in the manuscript. The first step is for the authors to clarify the organization of the manuscript. The methods are not coherent with presentation of the abstract. The authors presented the intervention, the patient’s inclusion and data collection (of the cohort?), then the practice active data then the analysis of the practice data then the cohort. This could be easily done by small changes. The second step is to give a (or two) flow chart of the inclusion of the patients in the cohort and the practice data (and non inclusion, with number of subjects to have idea of the participation rate). This could clarify the link between the cohort part and the practice data (not clear for me).

My third comment is about the limits: the authors should be more careful about the potential selection effects of this small cohort of patients, the small period of follow-up, and the validity of the outcome measure for acute back pain.

My last major comment is about the conclusions that should be clearly more careful. The authors found no significance (except for the subgroup of women) and centered in the question asked.

Minor Essential Revisions

I have different details that could be easily corrected:

- abbreviation should be clarified in the first use (even known usually, like UK or GP, Sig in table 1)
Check the statistical tests use in the table 1 (Mann Whitney was not used I think to compare the proportion of gender).

In conclusion, if authors clarified the methodology and the intervention and should be more careful of the conclusion, I could be reevaluated (to be sure there is a coherence and no major bias), taking into account the subject is important.

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

**Quality of written English:** Acceptable

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

**Declaration of competing interests:**

I declare that I have no competing interests