**Reviewer's report**

**Title:** Effectiveness of a decision aid for promoting colorectal cancer screening in Spain: a randomized trial

**Version:** 0 **Date:** 24 Nov 2017

**Reviewer:** Pedro Rodrigues

**Reviewer's report:**

The manuscript presents the results of a clinical trial to estimate the impact of a decision aid in colorectal cancer screening in Spain.

Although the methodology seems to have been correctly followed according to the registered protocol, there are several issues that, in my opinion, make the results unsound:

a) first and foremost, since the outcome evaluation is done immediately after intervention, this study at most evaluates short-term memory efficacy, not effectiveness of the intervention;

b) given the specific population (islands), the authors should discuss if the population has particular characteristics that could have biased the study results;

c) selection criteria are somewhat strict (e.g. no family history of CRC, center B with individuals who have refused screening already);

d) evidence coming from this study is limited due to the several potential bias (some well discussed by the authors; other not so much) including hawthorn effect, selection, desirability and measurement bias, and for using proxy outcomes (intention to be screened);

e) statistical analysis was not clear; why did the authors use ANOVA to compare two groups (A vs B; DA vs control)?

f) why was intention to be screened dichotomized using cut-off 50% of the predictive model? Would it be better to fine-tune the cut-off value using ROC analysis?

g) evaluating the outcomes immediately after the intervention is a bias too strong in this field of application; I cannot well value the results using such strategy;

h) moreover, limitations in evaluating instrument (discussed in the manuscript) raise even higher doubts regarding the evidence exposed by the study; it seems several issues represent
potential biases towards and overestimation of the effect, although the results are inline with
the previously published meta-analysis (Volk et al., 2016);

i) the decision aid should be better described and discussed, to allow for a better assessment of
the potential benefits and drawbacks.

Overall, a collection of potential biases and inespecific effects prevent me from assessing the
evidence of this study, which would go beyond the existing meta-analysis of Volk et al. (2016)
and would yield publication of the manuscript.

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.

No

Are you able to assess any statistics in the manuscript or would you recommend an
additional statistical review?
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assessment in your comments to the editors.

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