Reviewer’s report

Title: Tracking physical activity using smart phone apps: Assessing the ability of a current app and systematically collecting patient recommendations for future development

Version: 0 Date: 23 Apr 2019

Reviewer: Liliana Laranjo

Reviewer's report:

General comments:

This study aimed to evaluate the feasibility of two smartphone apps to monitor patients' physical activity pre- and post-bariatric surgery. The paper is relatively well-structured; the writing could be improved. The background is confusing and missing important references throughout. It is not clear why the authors chose to use the Theoretical Domains Framework. Methods lack important information. The results are poorly organised and very confusing. The conclusion overstates the results.

Specific comments:

Background

- Does not follow the usual inverted pyramid format and states the study objective in the first and last paragraphs.

- Paragraphs 2 and 3 should be merged into a single paragraph

- Page 5, line 12: it is not clear what the authors mean by "simpler technologies".

- Paragraph 4 is too vague ("richer physical activity profiles"; "reliable smartphone app") and misses many important references, such as:


- Paragraph 5 is badly written.
Methods

- The study design is not described by the authors in the first paragraph. The authors mentioned having registered the trial but do not provide details as to whether the present paper is a subgroup analysis of this trial or what aspect of the trial the paper covers.

- The methods state the aims once again—unnecessary. Furthermore, some of the aims stated in the methods section are not research aims and are not linked to research outcomes (e.g. remotely monitor patients' physical activity....."—for what purpose?). Aim 3 is very poorly defined.

- No information about the development, testing, and validity of the "TDF informed survey" is provided.

- The description of both apps is poor and does not mention the behaviour change techniques used. Authors should refer to the CONSORT-EHEALTH guidelines for details about how to describe the intervention.

- There is no mention of when patients were recruited and how long the recruitment period lasted.

- How was withdrawal assessed?

- What was the study duration??

Results

- The criterion for inclusion in the final analysis is an extremely low bar and it is not explained the rationale for this choice. The authors should at least provide more information about the quality of the data they gathered. What was the median and IQR of the number of days per participant where the smartphone's location services were on for 50% of the time between 6am and 10pm? Is this what is presented in page 10?

- The analysis of physical activity measures is very confusing (page 11). It is not clear how this analysis is related to the study aims. Figure 1 is misleading as it does not include the total number of days used to calculate the average minutes walked per day in each group.

- Linear regression analysis seems pointless as the aim is not clear. Did you have a pre-defined hypothesis?

Discussion and conclusion: generally overstate the results.

References: incorrect formatting
Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

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I am able to assess the statistics

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