Reviewer’s report

Title: The impact of depression and anxiety treatment on biological aging and metabolic stress: study protocol of the MOod Treatment with Antidepressants or Running (MOTAR) study

Version: 0 Date: 13 Aug 2019

Reviewer: Chad Rethorst

Reviewer's report:

This manuscript details a study protocol aimed at examining the effect of two depression treatments (antidepressant medication and exercise) on markers of biological aging. While the study is likely to make a meaningful contribution to the field, more detailed descriptions of some aspects of the study methodology are necessary.

1. The authors state that treatment assignment will be based on patient preference and patients "without strong preference" will be randomized. The authors should describe the process in which preference will be determined and how those without a "strong preference" will be identified.

2. Please provide further detail on the running intervention. The running sessions will be led by a staff member. Will these sessions include multiple participants or will these session be conducted one-on-one with the staff member?

3. The stated purpose of the study is to "examine and compare the impact of antidepressant medication and running therapy on biological aging..." However, the statistical analysis does not include plans to compare the two treatments, and the power calculations are based on detecting a within-group change in the markers of biological aging.

4. Are any analyses planned to examine the effect of treatment preference? For example, do people who prefer exercise as a treatment achieve similar or greater benefit compared to those who were randomized to exercise?

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.

Unable to assess

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

Unable to assess

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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