Reviewer's report

Title: Preferred intensity exercise for adolescents receiving treatment for depression: A pragmatic randomised controlled trial

Version: 1 Date: 25 March 2015

Reviewer: Jesper Krogh

Reviewer's report:

Re: ‘Preferred intensity exercise for adolescents receiving treatment for depression: A pragmatic randomised controlled trial’

The authors have performed a RCT for the study of exercise on adolescents for patients receiving treatment for depression. They found no effect of exercise. The study is conducted and reported at an acceptable level and it is highly recommended for publication in BMC Psychiatry once the authors has addressed minor issues.

This study provides new and important information to this field. Using preferred exercise intensity in a pragmatic intervention with post-intervention follow-up is very interesting and recommendable.

Specific comments:

Title: I suggest that the title reflects the PICO ‘criteria’ for clarity: Aerobic exercise versus treatment as usual for adolescents with major depression. A Randomized clinical trial. Just my opinion.

Abstract:
Please specify that the primary outcome was depression score post-intervention.
Please specify type of exercise (aerobic exercise)

I disagree with the authors on the conclusion. I think the conclusion should primarily state that there was no effect of exercise post-intervention on depressive symptoms. The positive finding was a secondary outcome, borderline significant and not related to physical activity otherwise or quality of life – i.e. could therefore be a type 1 error.

Background
The references chosen to argue that exercise is beneficial is adults are peculiar. Why not site systematic reviews of RCT. E.g. Cochrane. These also suggest that exercise not beneficial in studies with low risk of bias, which could explain the findings in the current study.

The authors cites and discuss results from longitudinal non-controlled studies, which states that lack of exercise is associated to high risk of depression. No causality can be claimed here. I suggest that the authors focus on results from
RCTs.

No plausible mechanism for an antidepressant effect is offered?

Method

Please describe the TAU intervention in more detail. ‘Psychological intervention’ is a very broad and in a professional context meaningless term.

Was any form of exercise capacity measured before and after to see whether they actually increased their fitness levels? And why not?

It is stated that the trial statistician generated the allocation sequence – but how? Computer generated?

Primary outcome: Why choose a new depression scale? As I understand this is a self-reported instrument and therefore the primary outcome is not blinded?

Sample size description is not sufficient. Please report how many points on the CDI which is expected from exercise and cite a relevant paper. Citing Cohen is insufficient. It was ment for effect of teaching and not exercise!

Please state the expected SD post-intervention.

It is stated that ITT analysis is used. According to the tables this is not the case. Please define ITT analysis. Please report results using all patients regardless of compliance and follow-up and use appropriate statistics than can handle missing data.

Using the mixed model approach provides an overall effect estimate for repeated measurements - why not report this?

Results:

Figure 1 is problematic. A lot of patients appear to be excluded from analysis. Post-hoc exclusion of patients for failing to fulfill inclusion criteria is also problematic. This patient should be included.

The observed finding at 6 months could be due to inappropriate handling of data!

Discussion

‘A non-significant effect was observed’ – I disagree. It should clearly be stated that no effect was found post-intervention.

The ‘significant’ effect at 6 months should be discussed in terms of the risk of type 1 error, bias (non blinded outcome assessment), and lack of appropriate handling of missing data known to cause exaggeration of treatment effects.

While the results from an unpublished study is quite interesting it is inappropriate to refer to these data in the discussion.
Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests