Reviewer’s report

Title: The Effect of Exercise as Adjunctive Treatment on Quality of Life for Individuals with Alcohol Use Disorders: a randomized controlled trial

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Reviewer: Jonathan Ling

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PUBH-D-18-03629

Full Title: The Effect of Exercise as Adjunctive Treatment on Quality of Life for Individuals with Alcohol Use Disorders: a randomized controlled trial.

This paper reports an investigation of the influence of an exercise intervention on quality of life in individuals with alcohol use disorder (AUD). Participants were allocated to one of three arms (including a control). No statistically significant differences were found between the groups.

The paper presents a useful overview of the literature on the use of exercise for people with AUD, and the logic for adopting the approach is well made. However, clarification of the theory underlying the study would help with the interpretation of the results. Why is exercise felt to be a good candidate for an adjunct treatment for people with AUD? Is it distraction, an endorphin high, the potential for socialising in a different environment?

Why was the intervention chosen to run for 6 months?

There was no sample-size calculation presented. Were the numbers of participants recruited to each arm sufficient to detect a difference between them? This is particularly relevant given that there was a trend towards a significant difference for the pain dimension of EQ5D.

The Results section is somewhat underdeveloped. Narrative giving an interpretation of the tables and figure would help the reader. Some of this, such as reference to the scores on the pain dimension is presented in the Discussion and would be better moved to the Results, with the interpretation of this kept in the Discussion.

In the Discussion, some further analysis of why participants didn't benefit from the intervention is needed. Why do the authors believe they obtained different results to those studies presented in the Introduction that found exercise to be beneficial for people with AUD?

Regarding the discussion of the pain dimension - and of course we should be wary of spending much time on non-significant results - can the authors expand on why this is 'interesting'? The section in the Discussion on the meaning of pain (p11, l41 on) does go beyond the scope of the study and the results, so should be removed.
A high drop-out rate for people undergoing treatment for AUD does not seem surprising - how does this compare to similar studies?

Some qualitative work would have helped answer the question of why there was no benefit of exercise and I would suggest this as a recommendation for future research.

Minor points

In most of the paper AUD is used, but sometimes AUDs (and SUDs) is adopted. Suggest amending latter for consistency.

Use 'participants' throughout, rather than 'subjects'.

**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?**
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No

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