Reviewer’s report

Title: The influence of self-reported leisure time physical activity and the body mass index on recovery from persistent back pain among men and women: A population-based cohort study

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Reviewer: Wei Bao

Reviewer’s report:

In a Swedish population-based cohort, Bohman and colleagues evaluated the associations of recovery from persistent back pain (PBP) with leisure time physical activity and body mass index, with an emphasis on the sex difference.

The study in general was well designed, but several major points should be addressed.

1. As the recovery from PBP is a common outcome (> 10%) in this study, the use of odds ratio estimated by logistic regression is misleading. The pitfalls and alternative approaches have been discussed in previous publications, such as McNutt et al. Am J Epidemiol. 2003;157(10):940-3; or Knol et al. CMAJ. 2012;184(8):895-9.

2. PBP could be a primary condition or a secondary complication as a result of other diseases. Is the information about some relevant diseases or illness (e.g., rheumatoid arthritis) collected in this study? If so, a sensitivity analysis after excluding participants with these known diseases or illness will provide better understanding on the underlying mechanism. In addition, the sex difference of the association between physical activity and recovery from PBP may at least partly reflect the benefits of physical activity on the PBP-related underlying diseases or illnesses that are more common among women.

3. It seems that the definition of recovery from PBP in this study is different from other studies. The authors need justification for this discrepancy. In addition, a sensitivity analysis using the definition used in previous study is necessary.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests