Reviewer's report

Title: Self-reported physical activity and lung function two months after cardiac surgery - a prospective cohort study

Version: 1
Date: 4 January 2014

Reviewer: DAVID Horne

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Major Compulsory Revisions:
1. The physical activity assessment tool is not validated. As there are other very well validated tools for physical activity in cardiac patients (i.e. International Physical Activity Questionnaire recommended by AHA), don't promote it as a future tool for validation. It's a limitation and leave it at that.

2. According to method section, patients that had category 4 activity pre-operatively but category 2 or 3 post-operatively was labelled sedentary. At level 3. A patient would be physically active but in your study would be grouped in sedentary. This needs to be defined if there were patients that actually were physically active in the sedentary group or the definition for being sedentary vs. physically active needs to be changed in a revision.

4. In discussion paragraph 4 is written, "Patients who categorized themselves as being sedentary had lower lung function than their more active counterparts". You only reported change in function. Never actual lung function values thus this statement is not true.

Except for Table 4 and paragraph 1 of result section, there is no reference to the actual percentage of predicted lung function tests of the 2 different groups. This HAS TO BE PART OF THE MANUSCRIPT! Just reporting the whole population is not adequate. For all we know, the Sedentary group had higher % of predicted values before or after surgery, but less of a recovery after cardiac surgery.

5. Also, because there are no actual lung function values given in each group, the reader can't interpret if your results are actually clinically significant. In revision please explain why the difference in recovery of lung function tests between groups are actually also clinically significant.

6. In Discussion paragraph 4, "The fact that the active patients were closer to their preoperative values postoperatively may indicate causation...". You only did univariate analysis of data, so you can't even say that physical activity is independently associated with improved recovery of lung function, not even to mention "causality". In fact, your other significant differences in descriptive data could plausibly also affect the lung functions. The mentioned sentence needs to be revised or deleted. Also, conclusion needs to be changed as your data only shows that there could be significant association with physical activity and recovery of lung functions after cardiac surgery and that it needs further objective investigation. Your paper has no objective reporting of lung functions nor
objective physical activity testing, thus you found a possible marker needing further investigation.

7. BMI was discussed in discussion. Was the sedentary group's BMI high enough to conclude that they are at risk of other complications associated with obesity and cardiac surgery. Also, why did you not discuss the other significant univariate, male sex, and it's possible influence on your results? Please include.

Minor Essential Revisions:
1. in the abstract "spirometry" testing was performed, but in table 4, FRC is also presented which can't be measured with a spirometer. Suggest using " formal lung function testing was performed"
2. Define the group stratification under methods in abstract, then refer to those groups in result section - otherwise too confusing to follow result section.
3. Delete the description of the groups in the result and discussion section of text. Refer to the group name: Sedentary or active for rest of manuscript

Discretionary Revisions:

Level of interest: An article whose findings are important to those with closely related research interests

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