Reviewer’s report

Title: Physical activity and sedentary behavior following pediatric burns - a preliminary investigation using objective activity monitoring

Version: 0 Date: 03 Jul 2017

Reviewer: Dale Edgar

Reviewer’s report:

Manuscript Number: SSMR-D-17-00018

Title: Physical activity and sedentary behavior after pediatric burns - on objective activity monitoring in special populations

Thank you to the authors for a well written manuscript. The manuscript requires major adjustment to be publishable.

Title - Please adjust the title to reflect that the sample size of this study indicates it is a pilot trial as it does not include enough numbers to approach the central limit theorem.

With respect to that comment, do the authors have any reason why they would not want to wait to include 40 participants in this study, and, or add in patients who are closer to their burn injury? It would improve generalisability of the results.

This reviewer believes the manuscript can be publishable with the following changes and clarifications:

Background

1. The authors quote references which infer that the hypermetabolic impact of burn is a factor in their study yet, none of the recruited patients were less than 1 year post-burn. Unless the authors have other references which indicate hypermetabolism or fatigue are demonstrable beyond 12 months post-burn, then these statements are not on point for this study cohort.

2. In contrast, the authors have neglected the emergent and significant evidence of long term consequences of burn injury on multiple systems of the body and in early onset of 'diseases of ageing' - ie that which survivors burned in childhood would be most vulnerable. The positive impact of exercise may be supported as a method of amelioration of a number of these consequences also. For completeness, please review the work of Janine Duke and team in Western Australia and bolster your argument around the use of exercise for burn injured children.
Methods

3. Line 84 - Study Population - with ref to Table 2 - was there a specific exclusion criteria for inhalation injury? This should be noted if so. However, if the recruitment result presented is random, then the implications for the study must be noted. In other words, none of the included cohort had an inhalation injury and thus, the study is of skin injury only? Following on - were electrical and chemical injuries included for instance? If not, were patients excluded on this or any other basis related to agent or mode of injury that may cause confounding with respect to the research question?

4. Line 88 - Please justify why the authors chose the <6 week admission exclusion criteria? If related to implications of immobility, ICU or bed rest - please include references to support such statements.

5. Please clarify if days which were invalid or recording time was shorter than required were excluded from all analyses or just the total PA comparison (with norms).

Results

6. Line 176 - grammar - ? clearer to express the category description and the variable title separately - ….40% ….wear time was measured as physical activity (total PA) …. Similarly Line 213 - using the variable name makes for a confusing sentence.

7. Table 3 - typo in mean statistics? It seems that only moderate, vigorous and MVPA category means lie within the range? Is there a factor of 10 missing in the others?

8. Line 213 - please define or interpret, for the reader, β coefficients in terms of meaningful measurement units throughout the Results.


Discussion

10. In respect to the age related influences on PA, the fact that none of the recruited patients are within one year of injury ie burn injury hypermetabolic influence is minimal, have the authors truly confirmed novel results compared to other studies exploring the impact of age on sedentary behaviour? If this is the assertion, then please tease this out, confirming with the available results. The last statements in Discussion seem to confirm that these results are not particularly novel.

11. Similarly, is the gender related result novel with respect to other uninjured cohort studies?
12. Line 334/5 - this statement requires rethinking or justification. Is there any indication in the literature that volunteers will be likely to have higher PA levels compared to those who did not engage?

Conclusion

13. Too long - please reduce to one or two sentences with a clear take home message - which is adjusted based on considerations and queries in points #10 and #11 above. Consider integrating Line 352 onwards with Discussion.

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.

No

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?
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