Reviewer's report

Title: Increasing children's physical activity through a teaching-assistant led extracurricular intervention: Process evaluation of the Action 3:30 randomised feasibility trial

Version: 3
Date: 9 October 2014

Reviewer: Saskia te Velde

Reviewer's report:

Major
This is an interesting paper relevant for the field. It is well written and easy to read. However, I do have some comments and suggestions.

1. My major concern, which comes back in some of the other comments listed below, is that it is stated that the intervention was based on the SDT framework, however, it is not explained what specific components of the intervention were used to improve the three concepts of the SDT (autonomy, relatedness, competence), what was exactly done to improve these three aspects. Next, the process evaluation could then evaluate whether the intervention was implemented as intended, had good reach etc, and relate this all to the proposed mediators of PA according the SDT. There is no clear link between the theories and concepts mentioned in the introduction (i.e. concepts of the SDT and concepts of the process evaluation) and the next sections: in the methods it is not clear how concepts of the SDT and process evaluation are operationalized and assessed, therefore it is hard to relate the findings to the original aim. As I see it now, it is mostly about how activities are appreciated or not appreciated and what could be improved.

Background.
This section is well written and follow a good structure, however, I do miss some information about the intervention and general principles of a process evaluation good be better introduced.

2. major
The intervention is said to be based on the SDT and aims to improve autonomy, belonging (or relatedness) and competence. However, I do miss information on how the intervention addressed these important concepts of the SDT. What activities were done to improve autonomy, belonging and competence?

And did the outcome evaluation also assess if changes in these concepts were achieved?

This is important to know. If for example the process evaluation shows that specific activities that addressed autonomy were not implemented, then the researchers know why some aims in terms of behaviour and mediators were not
achieved.
Other details about the intervention could be added. E.g. were all children from
the intervention school obliged to attend the sessions? Or could they choose?

3. major
General concepts in process evaluation are: context, reach, dose delivered, dose
received, fidelity, implementation (and recruitment). It would be good to introduce
these concepts and operationalize them in the methods section.

Methods
4. Major
There should be a clear link between the aims and the methods. It would be
helpful to operationalize the concepts of the SDT and the concepts of the
process evaluation, so that it is clear what is measured by which questions. For
example, why is ‘enjoyment’ assessed, what concept is captured by this
assessment?

5. Why was chosen for heterogeneous groups with respect to gender? As the
researchers were interested why the intervention was not effective among girls,
they might get more information for homogeneous groups. Please clarify.

6. In the topic list for the focus group interviews with the pupils it reads ‘impact of
the intervention on the individuals’. What was meant with this? Does this refer to
impact on the three important concepts of SDT or only on PA?

Results
7. Minor essential
Line 217-218 (Thus…) is already an interpretation of the results, and should be
moved to the discussion section, the same for lines 228-229.

8. Minor essential
Please introduce in the methods section how you are going to present the
findings from the qualitative part.

9. major
Can the findings from the qualitative part be linked to concepts of the SDT and
process evaluation? E.g. impact on skill level, can that be linked to competence?
Then there will be a clear link between the theory and concepts mentioned in the
introduction, methods and results sections.

Discussion
10. major
At the end of the first paragraph the authors state that ‘…it is possible to train
TAs within a strong SDT framework to deliver enjoyable…’. It is still not clear how
the SDT framework was translated in practical activities and how these activities
improved autonomy, relatedness and competence. Please be more specific how
assessments, and results relate to SDT concepts.

11. major
Similarly, in lines 592-595 it says that ‘…underpinned by self-determination theory…..that these aspirations were partly met’. I still don’t see this. How was autonomy improved, how was relatedness improved? Again make clear throughout the manuscript how these SDT principles were translated in the intervention, how they were assesses and how they were affected by the intervention.

12. major

Most of the results and discussion are about how the intervention was appreciated and about how to improve the intervention and not really about how the intervention was implemented and received. Nevertheless, the authors restate that the aim of the paper was to identify ways in which the intervention may work and examine possible mediators of behaviour change. Please related the mediators identified (enjoyment, choice et) to the concepts of the SDT, so for example, was improving enjoyment related to improvements in relatedness? Was choice related to feelings of autonomy? Etc.

13. major

I miss results and discussion about implementation fidelity etc, i.e. results related to general principles of a process evaluation.

14. major

I also wondered how the research question about gender differences was answered by the methods and subsequent findings.

Figure 1

15. what do the different lines represent, what do the labels mean? Is it intervention school number? Please clarify.

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 interest