Reviewer's report

**Title:** Study protocol. Active video games to promote physical activity in children with cancer: a randomized clinical trial with follow-up

**Version:** 2

**Date:** 11 November 2013

**Reviewer:** Carolina Chamorro-Vina

**Reviewer's report:**

This is a very interesting article that should be published after minor essential revision in order to allow replication of the study and improve the safety of the exercise intervention. From a personal perspective prospective the area of research is very exciting and needed. We are in a time frame in which we know that physical activity is important in order to improve the recovery of pediatric cancer patients but we need to find the best way to motivate children to do so. This is a very interesting and exciting unknown field of research that only a couple of articles have started to explore. The English grammar is acceptable, the hypothesis needs a minor revision but the methodology answers the research question. More details are needed mainly in the intervention section in order to be able to replicate it. More consistency with your main and secondary outcomes is needed. Also, be careful when you cite in the texts to put the dot after the square bracket. Also be careful to adhere to the reference style cited in the BMC pediatric. Please see below details about Minor essential revision needed. Please do not hesitate to contact me if you have any question or need clarification.

Warm regards,

Dr. Carolina Chamorro-Vina

**Minor Essential Revisions**

1- Please complete the aim of the study that appears in the ABSTRACT. This does not reflect what you are going to assess. However the aim of the study is well explained in the body of the article.

2- Please, review the references. Following BMC Pediatrics reference style: http://www.biomedcentral.com/bmcpediatr/authors/instructions/studyprotocol#formatting-references

3- Please, review the cited references in the text and be sure that all references are cited before the dot. Example: Children with cancer may also suffer from reduced muscle elasticity and ligament laxity.[10, 11, 12, 13.]

4- Please, add reference “Normal participation in physical activity, school physical education classes and group activities is interrupted at a time when the child’s motor skill development is rapid and highly important.

5- Please, add reference: “Physical activity recommendations for children with ALL indicate that once during the maintenance phase of treatment children with
ALL should progress to an activity level close to the recommendations set for healthy children”.

6- “Evidence for and against active video gaming to promote physical activity exists, but most studies concerning exergaming used in rehabilitative purposes have positive results [27]”. Probably you should explain that most of these studies have poor quality design!!!

7- Inconsistence in primary and secondary outcomes. At the beginning of study aims you cited motor performance as a primary outcome and then you do not include it in the Hypothesis and after the hypothesis you cited motor performance as a secondary area of interest. Please be consistent with the primary and secondary aims of the study. At the same time you express that sedentary behavior is a secondary outcome and then you cited in the hypothesis as a main outcome.

8- In the methods section:
   a. Regarding participant single-blinded randomization I think this is not possible if we have an exercise group. I think you should blind the assessors in order to guarantee a better interpretation of data and avoid bias.

9- Intervention
   a. The intervention sounds really fun for the kids; however we need to know more detail about it in order to ensure the safety of that intervention for this delicate population. Also we need to know more details in order to reproduce it.
   b. Can you explain what is the individual condition that might require specific considerations and what these considerations are?
   c. How are you going to ensure that the exercise intensity will be appropriate for immune suppressed participant? How are you going to monitor exercise intensity?
   d. How are you going to control the correct execution of movement?
   e. What did the physiotherapist recommend to the participant?
   f. How will the physiotherapist evaluate each participant and their ability to do exercise?
   g. What would happen if the participant has a question regarding exercise execution?
   h. How are you going to ensure the safety of the exercise intervention if we have a participant with osteoporosis?
   i. How are you going to ensure the safety of the exercise if you have a participant previously treated with 250 mg/m2 or more of anthracycline?
   j. Especially for the smallest kids how are you going to ensure the exercise execution is well done and what kind of games are you going to recommend. I think the Wii Fit game is not age-appropriate for kids under 5 years old. Why not consider other games suitable for smallest kids such as Nickelodeon Wii fit. I am currently using it in one of my interventions.

10- Outcome measures:
a. Can you please give more details about the accelerometer assessment?
   i. How long are they going to use it?
   ii. If it’s water proof and they can use it in a swimming pool
   iii. Where are they going to wear it (hip or wrist)?

b. About the questionnaire developed by the study can you please provide more details and attach the questionnaire?

c. Can you please define what favorable activation methods mean?

Discretionary Revisions
a. In the method section: Not sure if a coin toss is the best way to randomize a small sample size. How are you going to ensure the same amount of participants in each group? Why don’t you use Research Randomizer software?

**Level of interest:** An article of importance in its field

**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' below. If your reply is yes to any, please give details below.