

Peer-review Comments and Author Responses

Reviewer 1

1. *The title mentions cognitive deficits as outcomes, but the authors also analyzed motor and behavioral outcomes.*

Thank you very much for your observation. You are totally right. Most of the selected studies included scales related to behavioral and motor abilities in addition to cognition. Since cognitive deficits frequently affect behavioral and motor abilities in children and adolescents and as a result, in addition to our outcome of interest, we reviewed this as well. (which we explained in the study selection)

2. *The word "effectiveness" implies that they are going to analyze later phase trials, which is not mentioned in the methodology. Maybe consider changing this word for "effects", which would be more general.*

Thank you very much for your observation. You are totally right. We changed the title into the "Effect of video games or virtual reality in reducing symptoms of cognitive deficits in children and adolescents with ADHD: a systematic review".

Introduction:

3. *In the first paragraph, I would suggest the authors provide more information regarding the burden of ADHD and the prevalence of cognitive disabilities among ADHD patients, since the intervention they target in the study is focused on improving cognition.*

Thank you very much for your observation.

4. *Furthermore, I missed references to support the last sentences of the paragraph, regarding the existence of previous efficacy for interventions and new treatments.*

Thank you very much for your observation. You are totally right. We added the references.

5. *In the second paragraph it is well explained how the intervention might work, but I also missed references to support the last sentences regarding previous evidence.*
6. *The last paragraph adequately explains the study design and purpose, but, overall, I missed the authors providing arguments to support the relevance, novelty of the study and the gap it is trying to fill.*

Thank you very much for your observation. You are totally right. We added the references and highlighted the gap and relevance of this study.

Methods:

7. *Please provide the last date of the search, instead of just describing the month.*

Thank you very much for your observation. You are totally right. We have added the date.

8. *Please provide the definitions for the PICOT in the search strategy: What is the definition of virtual reality and video game interventions? How did you define children and adolescents (the age limit)? Please describe the standard definitions of the outcomes of interest.*

Thank you very much for your observation. You are totally right. Considering the limitation in the word count, we have added a simple definition of PICOT in the search strategy.

9. *Why did the authors choose to limit the studies that included more than 10 patients?*

Thank you very much for your observation. We didn't want to include underpowered studies.

10. *In Risk of bias assessment, why did the authors state "Given the observational design of the included studies...", considering that previously they had mentioned that would include only clinical trials?*

Thank you very much for your observation. Actually, we have included RCTs and NRCTs as well, and have mentioned in the inclusion and exclusion criteria.

Results:

11. *Overall this section is well written, with the main results of the studies summarized in the text and the Tables. The flowchart is complete and well explained in the text.*

Thank you very much for your observation.

12. *In Table 3 there are some words that are not spelled correctly.*

Thank you very much for your observation. We have made changes accordingly.

13. *In Table 3, the results from Benzing et al are described with improvement in general psychopathology, but this is a really vague expression. Could you further elaborate?*

Thank you very much for your observation. The general psychopathology of ADHD may be expressed behaviorally, academically, socially, or emotionally in children and adolescents aged 6 to 18 years old and is assessed by Conner global index score which is explained under the result section.

14. *The authors describe results on cognitive, behavioral and motor outcomes, even though in the title and objectives they state the focus would be the cognitive symptoms. Why did you decide to include other outcomes?*

Thank you very much for your observation. You are totally right. Most of the selected studies included scales related to behavioral and motor abilities in addition to cognition. Since cognitive deficits frequently affect behavioral and motor abilities in children and adolescents and as a result, in addition to our outcome of interest, we reviewed this as well. (which we explained in the study selection)

Discussion:

15. The main results of the mini-review are not highlighted in the first paragraph of the discussion.

Thank you very much for your observation. We have highlighted the results (the methodological flaws observed on reviewing) in the first paragraph.

16. I also missed the search for similar previous reviews, to compare the results and put them into context.

Thank you very much for your observation. You are totally right. We have added them into the discussion section.