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The Effects of Physical Activity on Key Variables That Influence the Characteristics of Children with Attention Deficit Hyperactivity Disorder

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1. Round 1

1.1 Reviewer 1

Reviewer:

The sentence “Approximately 3% to 7% of children are affected by ADHD, with a higher prevalence in boys compared to girls” needs a more current citation. Consider referencing a recent large-scale study or meta-analysis.

The description of the physical activity protocol (p. 6, ¶ 2) could be improved by specifying how the intensity was calculated for each child. Was a standardized formula used, or was it based on individualized heart rate monitoring?

The mention of diagnostic tools (p. 7, ¶ 1) could be expanded to explain why these particular tools (e.g., CPT, Wechsler Memory Scale) were chosen over others. Adding a justification for their selection would strengthen the methodological rigor.

In Table 1, several variables (e.g., Conduct Problem, Anxiety) are reported with p-values. Clarify whether multiple comparison corrections were applied, as this can impact the interpretation of statistical significance.

The sentence “The ANOVA results revealed significant effects in several areas...” (p. 10, ¶ 1) could be enhanced by including effect sizes for these significant findings to give readers a better sense of the practical significance of your results.

The paragraph on dopamine and neurogenesis (p. 17, ¶ 3) is informative but could benefit from referencing specific studies that have explored these mechanisms in depth, to give readers a more robust scientific background.

Author revised the manuscript and uploaded the updated document.

1.2 Reviewer 2

Reviewer:

The paragraph discussing the genetic and environmental factors influencing ADHD (p. 2, ¶ 2) could be strengthened by adding a brief explanation of how these factors interact neurobiologically, as this would enhance the scientific depth of the introduction.

The discussion on medication (p. 3, ¶ 1) mentions side effects like insomnia and headaches. Including the percentage or prevalence rates of these side effects would make the information more compelling and precise.

In the sentence “The sample consisted of 18 children aged 8 to 12 years diagnosed with ADHD...” it is unclear how representative this sample size is. Consider discussing the potential limitations of using such a small sample and how this might affect the study's generalizability.

The study states that heart rate was measured at intervals to ensure intensity. It would be beneficial to include a brief discussion about the reliability of this method and any steps taken to minimize potential errors.

There appears to be an inconsistency in how results are presented. Some results are very detailed, while others are summarized. Aim for uniformity in reporting outcomes to ensure clarity.

The statement “Existing studies can be categorized into two types: acute physical activities and chronic activities...” (p. 14, ¶ 2) could be expanded by discussing the implications of these differences for ADHD treatment strategies.

The discussion on the mechanisms of physical activity's impact on cognitive functions (p. 16, ¶ 1) could be enriched by mentioning specific neurotransmitters or brain regions involved. This would provide a more complete scientific explanation.

Author revised the manuscript and uploaded the updated document.

2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.