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Comparison of the Effectiveness of Aerobic Exercise Training and Neuro-Linguistic Programming (NLP) Strategies on Executive Functions in Students with Learning Disabilities

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1. Round 1

1.1. Reviewer 1

Reviewer:

The participant description requires greater diagnostic detail. The inclusion criterion “a confirmed learning disability” should specify who made the diagnosis, which diagnostic criteria were used, whether the disability involved reading, written expression, mathematics, or multiple domains, and whether standardized achievement testing was required. Because executive-function characteristics may differ across learning-disability subtypes, failure to characterize the sample limits both internal interpretation and external validity.

The exclusion criterion stating “absence of comorbid attention-deficit/hyperactivity disorder” requires methodological clarification. Please describe how ADHD was ruled out—clinical diagnosis, medical records, structured interview, teacher/parent rating scales, or another procedure. This is particularly important because sustained attention and executive-function deficits are strongly associated with ADHD, and inadequate screening could substantially confound the intervention effects.

In the Data Collection Tool section, the manuscript states that the BRIEF teacher form assesses planning and organization, yet sustained attention is also treated as a study outcome. This creates an important measurement ambiguity. Please state precisely which instrument generated the sustained-attention score. If sustained attention was derived from a particular BRIEF scale or composite, that derivation must be justified psychometrically and conceptually. If another instrument was used, it needs to be fully described in the Methods. At present, the measurement framework does not clearly correspond to the three dependent variables reported in the Results.

In the assumptions paragraph, the manuscript concludes that “Collectively, these results supported the appropriateness of proceeding with repeated-measures analysis of variance.” However, Box's M test was described in the Methods but is not reported in the Findings, and the exact Shapiro–Wilk statistics are omitted from the condensed results. Please ensure consistency between the stated analytic plan and the reported assumption checks. More importantly, because each group contains only 15 participants, graphical inspection of residuals and potential outliers would strengthen the assessment of parametric assumptions.

Authors revised the manuscript and uploaded the document.

1.2. Reviewer 2

Reviewer:

The sentence “The BRIEF has been extensively applied to populations with developmental and neuropsychological difficulties...” provides general psychometric evidence, but the manuscript should report reliability coefficients obtained in the present sample, especially for the planning and organization outcomes actually analyzed. Internal consistency from previous research cannot substitute for reliability in the current dataset. Please report Cronbach's alpha or an appropriate reliability coefficient for each relevant BRIEF subscale and clarify whether the validated Persian version was used.

The Aerobic Exercise Training Protocol remains too general for replication. The paragraph refers to “rhythmic whole-body movements, coordinated upper- and lower-limb activities, locomotor exercises, repeated movement sequences...” but does not provide frequency, session duration, weekly schedule, total number of sessions, target intensity, intensity-monitoring method, instructor qualifications, or progression criteria. These are essential intervention parameters. Please provide sufficient detail to allow another researcher to reproduce the protocol exactly, including whether intensity was monitored using heart rate, perceived exertion, or another objective criterion.

The NLP Strategies Protocol also requires substantially greater standardization. The paragraph lists “goal setting, mental rehearsal, restructuring internal dialogue, directed attention, and the use of cognitive cues,” but does not specify the number and duration of sessions, session-by-session content, therapist/instructor qualifications, treatment manual, homework assignments, fidelity procedures, or whether the same interventionist delivered all sessions. Because NLP is not a single standardized treatment, detailed intervention reporting is particularly critical for evaluating reproducibility and treatment integrity.

The manuscript should provide considerably more information about the control condition. The Methods state that “participants in the control group received no corresponding experimental intervention during the study period,” but it is unclear whether they continued usual educational or therapeutic services, received attention-matched contact, or were placed on a waiting list. A passive control group does not control for therapist attention, expectancy, social interaction, or novelty effects. Please clarify what the control participants received and discuss this design issue as a potential source of nonspecific intervention effects.

The Findings section should report participant flow and intervention adherence before presenting outcome analyses. The manuscript states that 45 students were allocated to three groups of 15, but does not indicate whether all participants completed the posttest and follow-up, whether any participants missed sessions, or whether any data were missing. Please report recruitment, allocation, completion, attrition, reasons for withdrawal, attendance rates, and the analytic sample at each time point. Given that absence from more than one session was an exclusion criterion, reporting adherence is necessary to evaluate possible attrition bias.

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2. Revised

Editor’s decision: Accepted.
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