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Effects of Additional Exercise Volume on Body Composition (Weight, Body Mass Index, and Fat Percentage) and Performance Metrics (Power, Strength, and Fatigue Index) in Adolescent Wrestlers

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1. Round 1

1.1 Reviewer 1

Date: 04 March 2025

Reviewer:

The sentence in the Introduction “These approaches frequently result in decreased glycogen stores, electrolyte imbalances...” should cite more recent empirical evidence specific to adolescents, as the cited sources are more general or adult-focused.

In the Methods, under Participants, the phrase “convenience and purposive sampling methods were employed” introduces potential selection bias. Please elaborate on how this bias was controlled or mitigated.

In the same section, the training intensity range “starting at 50%... progressing to 55% of 1RM” appears quite low for inducing strength or hypertrophic adaptations. Consider providing a rationale or citing supporting literature.

The description of the HIIT protocol “brief rest period of 10 seconds between each sprint” needs clarification—does this reflect common HIIT guidelines for adolescent athletes? Consider referencing protocols validated in similar populations.

In the Dynamic Strength Test, the application of the Brzycki equation is appropriate, but the sentence “The subject stands with feet shoulder-width apart...” would be better placed in an appendix or technical supplement to maintain academic tone.

The Discussion section claims “The mechanism underlying the effectiveness of our intervention can be explained through several specialized pathways,” but these pathways are insufficiently detailed. A deeper physiological discussion on fat oxidation, hormonal adaptations, or muscle fiber recruitment is warranted.

The sentence “The improvement in performance metrics can be attributed to the progressive nature of the training protocol...” is speculative without corresponding physiological data. Consider tempering this claim or citing studies demonstrating such mechanisms.

Authors revised the manuscript and uploaded the updated document.

1.2 Reviewer 2

Date: 07 March 2025

Reviewer:

In the Methods, under Diet, the instruction that “participants were instructed to maintain their food plan from the last two weeks” is vague. Please clarify whether dietary intake was monitored or standardized during the intervention.

Under Exercise Intervention, the statement “Resistance training was conducted once a week...” may raise concerns regarding insufficient frequency. Please justify why only one resistance training session per week was deemed adequate for eliciting measurable strength gains in this adolescent population.

The Rope Climbing Test section could benefit from more detail on the reliability and validity of this test for measuring upper body anaerobic power in adolescent wrestlers. Please cite any relevant validation studies.

The Body Composition Analysis section includes the statement “Weight measurements were taken daily throughout the weight reduction period,” which is inconsistent with the methods described elsewhere (no mention of daily tracking). Please clarify.

In the Statistical Analysis section, although ANCOVA is an appropriate test, the authors should state the covariates used in the analysis. Were pre-test scores used as covariates? This needs explicit clarification.

In the Results section, the phrase “BMI analysis revealed no statistically significant differences between groups” could be misleading if BMI changes were clinically relevant. Consider reporting effect sizes and interpreting them accordingly.

The performance metrics in Figure 2 are reported in unusual units (e.g., “m^2.Kg. S”). These units are not standard for strength or power metrics. Please clarify or convert to conventional units (e.g., Watts or Newton-meters).

In Table 2, some standard deviations (e.g., BMI: 21.01 ± 7.23) seem unexpectedly large for a homogeneous group. Please verify the data accuracy and address any potential outliers or data entry errors.

Authors revised the manuscript and uploaded the updated document.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.

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