

## Review report

**Final title:** Comparison of concurrent training versus high intensity interval training on speed and performance in collegiate football players

**Title at submission:** Effectiveness of concurrent training versus high intensity interval training on speed and performance in collegiate football players



### Correspondence

Ramana Kameswaran  
academic2020research@gmail.com

### Publication history

Received: 27 Aug 2025  
Accepted: 28 Dec 2025  
Published online: 31 Dec 2025

### Responsible editor

S M Rashed ul Islam  
0000-0002-8164-5905

### Reviewers

C: Anonymous  
D: Md. Abirul Islam  
0009-0004-8198-591X

### Keywords

football, functional performance,  
concurrent training, high intensity  
interval training

### Funding

None

### Ethical approval

Approved by IRB of Saveetha  
College of Physiotherapy (No.  
02/027/ISRB/PGSR/SCPT,  
Dated 4 May 2024).

### Trial registration number

Not applicable

### Reviewer C: Anonymous

This manuscript compares the effects of high-intensity interval training and concurrent training on speed and functional performance in collegiate football players using field-based outcome measures. The topic is relevant to sports rehabilitation and exercise-based performance optimization, and the intervention protocols are clearly described. Both training approaches resulted in significant improvements, with HIIT showing relatively greater gains. However, important methodological and reporting limitations are present, including insufficient statistical depth, insufficient justification of sample size, and limited discussion of clinical relevance and study limitations. Substantial revision is required to strengthen methodological rigor and relevance for a rehabilitation-focused audience.

#### 1. Comment Appropriateness of the Title.

The title is generally appropriate and reflects the main comparison between HIIT and concurrent training. However, the term “performance” is broad and could be more precisely defined to reflect the actual outcomes measured (agility and repeated-sprint ability).

**Response** We agree that the term “performance” was broad and could be made more specific. Accordingly, the title has been revised to clearly reflect the primary outcome measures of the study, namely agility and repeated-sprint ability, thereby improving clarity and precision.

#### 2. Comment Completeness and accuracy of the Abstract.

The study design should be explicitly stated, and the results would benefit from clearer emphasis on between-group differences rather than only p-values.

**Response** We agree that the abstract required greater clarity regarding the study design and the presentation of results. Accordingly, the study design has now been explicitly stated in the abstract, and the results section has been revised to emphasize between-group differences, along with the direction and magnitude of changes, rather than reporting p-values alone. These revisions improve the completeness, accuracy, and interpretability of the abstract.

#### 3. Comment Clarity of the rationale for conducting the study is given in the Introduction section.

The rationale is generally clear and supported by relevant literature. However, the specific research gap could be stated more explicitly to strengthen the justification for the study.

**Response** We agree that although the rationale was supported by relevant literature, the specific research gap could be articulated more explicitly. Accordingly, we have revised the Introduction section to clearly highlight the existing gap in the literature regarding the comparative effects of HIIT and concurrent training on agility and repeated-sprint ability, thereby strengthening the justification and relevance of the present study.

#### 4. Comment The Methods.

The method of randomization and whether assessors were blinded should be clarified.

**Response** We have now clarified the method of randomisation used for group allocation in the methods section. In addition, we have explicitly stated whether outcome assessors were blinded during data collection to improve transparency and methodological rigor.

#### 5. Comment Clarity and appropriateness of the Design to achieve the objective(s).

Nonetheless, the lack of justification for the sample size weakens the methodological rigor.

**Response** We agree that providing a justification for the sample size is essential to strengthen the methodological rigor of the study. Accordingly, we have now included a sample size justification, explaining the basis for participant selection and the statistical considerations used, in the Methods section. This addition clarifies the appropriateness of the study design in achieving the stated objectives.

#### 6. Comment Appropriate and thorough description of the Statistical methods.

The statistical analysis is limited. Reliance solely on paired and unpaired T-tests is insufficient. Effect sizes, confidence intervals, and appropriate interaction analyses (*e.g.*, group × time) should be included.

The method used to assess data normality should also be reported.

- Response** We sincerely thank the reviewer for this detailed and constructive feedback. We agree that the initial statistical analysis required further strengthening. Accordingly, the Statistical Analysis section has been comprehensively revised. Effect sizes and 95% confidence intervals have now been included to better interpret the magnitude of changes. In addition, group  $\times$  time interaction analyses have been incorporated to appropriately examine between-group differences over time. The method used to assess data normality has also been explicitly stated. These revisions enhance the robustness and transparency of the statistical methodology.
- 7. Comment** **Quality, clarity and appropriateness of the Table(s).**  
Tables are clear and appropriately organised.  
However, they could be enhanced by including effect sizes and confidence intervals.
- Response** The tables have been carefully reviewed and revised to improve clarity, consistency, and readability. Table titles and footnotes have been refined, units of measurement clarified, and the presentation of results standardised to ensure that the tables accurately and clearly reflect the study findings and are appropriate to the objectives of the manuscript.
- 8. Comment** **Major redundancy between text and tables/figures in the results section.**  
There is notable redundancy between the results text and the tables/figures.  
Numerical values are repeatedly described in detail in the text and could be reduced.
- Response** We agree that there was redundancy between the results text and the tables/figures. Accordingly, the results section has been revised to reduce repetition of numerical values, with the text now focusing on key trends, comparisons, and statistically meaningful findings, while detailed data are presented in the tables and figures. This revision improves clarity and readability.
- 9. Comment** **Pertinence of the discussion section whether it justify the main message of the manuscript without repeating the results.**  
It tends to reiterate results rather than critically interpret them, and the clinical/rehabilitative relevance should be expanded.
- Response** We agree that the discussion section required greater emphasis on interpretation rather than repetition of results. Accordingly, the discussion has been revised to reduce reiteration of findings and to provide a more critical interpretation of the results in the context of existing literature. In addition, the clinical and rehabilitative relevance of the findings has been expanded, highlighting their practical implications for training and performance enhancement. These changes strengthen the main message of the manuscript.
- 10. Comment** **Whether Strength(s) and Limitation(s) are well described.**  
Strengths and limitations are not clearly or systematically described.  
Key limitations such as small sample size, short intervention duration, inclusion of only male participants, and lack of follow-up should be explicitly stated.  
Whether the Conclusion of the manuscript is supported by the data.
- Response** We agree that the strengths and limitations of the study were not sufficiently or systematically described in the original version. Accordingly, a dedicated subsection on Strengths and Limitations has now been added to the manuscript. This section explicitly addresses key limitations, including the small sample size, short duration of the intervention, inclusion of only male participants, and the absence of follow-up assessments, while also highlighting the principal strengths of the study.  
In addition, the Conclusion section has been carefully reviewed and revised to ensure that all statements are fully supported by the study data and do not overstate the findings. These revisions improve transparency and strengthen the overall validity of the manuscript.
- 11. Comment** The conclusion is generally supported by the data.  
But, claims regarding the superiority of HIIT should be expressed more cautiously, given the methodological limitations.
- Response** We agree that, in light of the methodological limitations, claims regarding the superiority of HIIT should be stated more cautiously. Accordingly, the conclusion section has been revised to use more conservative and balanced language, avoiding definitive claims and clearly acknowledging the study limitations. This ensures that the conclusions are appropriately aligned with the data and the study design.
- 12. Comment** **Whether the manuscript is supported by appropriate and up-to-date References.**  
Minor refinement and consistency in citation formatting may be needed.
- Response** The reference list has been carefully reviewed to ensure that it is appropriate, relevant, and up to date. In addition, minor refinements have been made to maintain consistency in citation formatting in accordance with the journal guidelines. These revisions improve the overall accuracy and presentation of the references.
- 13. Comment** **Straightforward, clear, and logical Storytelling.**  
The overall flow of the manuscript is logical, but clarity would improve with more concise writing, particularly in the Introduction and results sections.
- Response** We agree that greater conciseness would enhance clarity and readability. Accordingly, the Introduction and Results sections have been carefully revised to reduce redundancy, improve sentence structure, and enhance clarity, while maintaining the logical flow of the manuscript. These revisions strengthen the overall storytelling of the study.

- 14. Comment**      **Limitations:**  
The conclusion is correct but could be strengthened by quantifying comparative improvements.  
Overall: Accurate but should improve clarity and consistency in terminology.
- Response**      We agree that the conclusion could be strengthened by providing clearer quantitative context. Accordingly, the Conclusion section has been revised to include quantified comparative improvements between groups, where appropriate, to enhance clarity and interpretability. In addition, the manuscript has been thoroughly reviewed to improve clarity and ensure consistency in terminology throughout the text. These revisions enhance the overall accuracy and coherence of the manuscript.
- 15. Comment**      **Clarity of the rationale for conducting the study is given in the introduction section.**
- Response**      We are pleased that the rationale for conducting the study was found to be clear in the Introduction section. No changes were required in response to this comment.
- 16. Comment**      Rationale is adequate but suffers from excessive length and redundancy, making it less coherent. A more focused rationale would enhance readability.
- Response**      We agree that the rationale, while adequate, required improved focus and conciseness. Accordingly, the introduction section has been revised to reduce length and eliminate redundancy, with a more streamlined and focused presentation of the study rationale. These changes enhance coherence and overall readability.
- 17. Comment**      The methods are described in sufficient details so that the study can be reproduced. Whether ethical concerns have been well described.  
Randomisation method not described (simple, block, sealed envelopes?)—this reduces reproducibility.  
Sample size justification/power analysis missing.  
No mention of blinding (assessors or participants).  
No monitoring or adherence reporting.  
Overall: Detailed but lacking methodological rigor and reproducibility clarity.
- Response**      We agree that, although the Methods section was detailed, several aspects required clarification to strengthen methodological rigor and reproducibility. Accordingly, the Methods section has been revised to explicitly describe the randomisation procedure used for group allocation, including the method employed. A sample size justification has now been added, outlining the basis for participant selection and statistical considerations. In addition, we have clearly stated whether blinding of participants and/or outcome assessors was implemented. Information regarding monitoring of training sessions and participant adherence has also been included. These revisions enhance transparency, reproducibility, and overall methodological quality.
- 18. Comment**      **Clarity and appropriateness of the design to achieve the objective(s).**  
A comparative experimental design is appropriate for the study objective.  
However:  
No control group (e.g., usual training) limits interpretation.  
Lack of blinding may introduce bias.  
Overall: Appropriate but not optimally structured.
- Response**      We agree that the comparative experimental design is appropriate for addressing the study objectives. We also acknowledge the limitations related to the absence of a non-intervention control group and the lack of blinding, which may influence interpretation and introduce potential bias. These issues have now been explicitly acknowledged in the Strengths and limitations section of the manuscript. While the inclusion of a control group and blinding was not feasible due to practical and logistical constraints, we have clarified these points to ensure transparency. Overall, the design has been retained, but its limitations are now clearly stated to provide a balanced interpretation of the findings.
- 19. Comment**      **Appropriate and thorough description of the Statistical methods.**  
Effect sizes (Cohen's d) are not provided.  
Confidence intervals are absent.  
Thus, statistical methods are basic but insufficient for high-quality reporting.
- Response**      We agree that the original statistical reporting was limited. Accordingly, the Statistical Analysis section has been revised to include effect sizes (Cohen's d) and 95% confidence intervals for the primary outcomes. These additions improve the interpretability of the findings and enhance the quality and rigor of statistical reporting in line with high-quality research standards.
- 20. Comment**      **Quality, clarity and appropriateness of the Table(s).**  
Titles lack detail (e.g., should include sample numbers).  
Units (sec) are not labeled.  
Illinois Agility Test incorrectly written as "ILLIONIS T TEST."
- Response**      The tables have been carefully revised to improve accuracy and clarity. Table titles have been updated to include sample size information, all units of measurement (seconds) have been clearly labeled, and the typographical error has been corrected to "Illinois Agility Test." These revisions ensure that the tables are clear, accurate, and appropriately presented.

- 21. Comment** **Whether Strength(s) and Limitation(s) are well described.**  
The manuscript does not include a separate Strengths and Limitations section, and limitations are not clearly stated in Discussion.  
Missing limitations:  
Small sample size.  
No power analysis.  
No long-term follow-up.  
No control group.  
No blinding.
- Response** We agree that the strengths and limitations of the study were not clearly or systematically presented in the original manuscript. Accordingly, a dedicated Strengths and Limitations subsection has now been added to the Discussion section. This section explicitly addresses the key limitations highlighted by the reviewer, including the small sample size, absence of a priori power analysis, lack of long-term follow-up, absence of a control group, and lack of blinding. The major strengths of the study have also been clearly outlined. These revisions improve transparency and provide a more balanced interpretation of the findings.
- 22. Comment** **Whether the manuscript is supported by appropriate and up-to-date References.**  
The references are:  
Relevant to HIIT, soccer, agility, and RSA.  
Issues:  
Some URLs are missing or unavailable.  
Some citations lack complete DOI or link.  
Reference formatting is inconsistent.  
Overall: adequate but requiring formatting correction.
- Response** While the references are relevant and appropriate, improvements in accuracy and consistency were needed. Accordingly, the reference list has been thoroughly reviewed and revised. Missing or unavailable URLs have been corrected or removed, complete DOIs or permanent links have been added where available, and reference formatting has been standardized in accordance with the journal guidelines. These revisions enhance the completeness and consistency of the reference section.
- 23. Comment** **Straightforward, clear, and logical Storytelling.**  
The manuscript is logically structured but:  
Introduction and Discussion are overly long and repetitive.  
Results section lacks narrative quality.  
Flow is acceptable but could be improved with more concise writing.
- Response** Improvements in conciseness and narrative flow were needed. Accordingly, the introduction and discussion sections have been substantially revised to reduce length and eliminate repetition, and the Results section has been refined to improve narrative coherence, emphasizing key findings rather than restating numerical data. Overall, the manuscript has been edited for clarity, conciseness, and improved flow, while preserving its logical structure.
- 24. Comment** **Appropriateness of the overall length of the article.**  
Introduction and Discussion are too long for a simple comparative trial.  
Methods are detailed and appropriate in length.  
Results are concise.  
Overall: slightly too long; could be shortened by 20–25%.
- Response** The overall length of the manuscript could be improved. Accordingly, the Introduction and Discussion sections have been carefully condensed, with redundant content removed and key points presented more succinctly, while retaining essential context and interpretation. The Methods and Results sections were maintained at appropriate length. Overall, the manuscript has been shortened substantially, improving readability and alignment with the scope of a comparative trial.
- Responsible editor:** S M Rashed ul Islam , ORCID: [0000-0002-8164-5905](https://orcid.org/0000-0002-8164-5905)
- 25. Comment** This article may be revised and formatted as a brief article. As per the BSMMU journal, please check the author guidelines and use the template. The text of brief articles amounting to 1500 words (excluding abstract, references and tables) should be divided into sections with the headings Abstract, Keywords, Introduction, Methods, Results, Discussion, References, Tables and Figures. Abstracts should be within 200 words having background, methods, results, and conclusion sub-headings along with a maximum of five keywords. Up to four highlights of the article need to be given in bullet points. Table/figure maximum 2/3). Up to 20 references (Vancouver-style. Add DOIs for journal articles, and URLs for websites).  
Title: Title may be rephrased as effectiveness was not observed. It may be replaced with comparison.
- Response** In accordance with the BSMMU journal author guidelines, the manuscript has been revised and reformatted as a Brief Article using the prescribed template. The main text has been condensed to within 1500 words (excluding abstract, references, and tables) and reorganized under the required headings: Abstract, Keywords, Introduction, Methods, Results, Discussion, References, Tables, and Figures. The Abstract has been revised to within 200 words and structured with the subheadings Background, Methods, Results, and Conclusion, and the number of keywords has been limited to five. Up to four article highlights have been added in bullet-point format.



The number of tables and figures has been reduced to comply with the journal limit (maximum 2–3). The reference list has been limited to 20 references, formatted in Vancouver style, with DOIs added for journal articles and URLs provided for web-based sources, as applicable.

In addition, the title has been rephrased to reflect a comparative approach rather than effectiveness, in line with the editor's recommendation, ensuring that it accurately represents the study findings.

These revisions ensure full compliance with the BSMMU journal requirements and improve the clarity, conciseness, and presentation of the manuscript.

**26. Comment**

Manuscript Revision:

Entire manuscript (formatted as Brief Article); Title page; Abstract; References; Tables and sections.

Line 22, add full name: corresponding author.

**Response**

The full name of the corresponding author has now been added at line 22, as requested, to ensure completeness and clarity of author information.

**27. Comment**

Abstract:

Line 84: Method: Mention the study design, why 8 weeks, limitation, mention the statistical software name, not the statistical test.

Line 42: Check the result for the discrepancy. Mention the results that describe the speed and performance.

Line 46: Omit this line, rather add improvement from HIIT over concurrent with statistics, which is the main objective, that will reflect the conclusion.

**Response**

The abstract has been carefully revised to address all points raised. The study design has now been explicitly stated, and a brief justification for the 8-week intervention duration has been included. Key study limitations have been briefly acknowledged, and the name of the statistical software used has been specified, without listing individual statistical tests, as recommended.

The results section of the abstract has been corrected to resolve discrepancies and now clearly reports outcomes related to speed-related performance measures, including agility and repeated-sprint ability. In addition, the line indicated has been omitted and replaced with a concise statement highlighting the comparative improvement observed with HIIT over concurrent training, including relevant statistical information, to better align with the primary objective and conclusion of the study.

These revisions improve the accuracy, clarity, and focus of the abstract in accordance with BSMMU journal requirements.

**28. Comment**

Introduction:

This section should be reduced.

Line 64-66: Please omit the sentence stating your opinion in the introduction.

Line 76: Exercise practice on athletes may be omitted, as this article is about a football player.

Line 80: Merge the sentence to avoid repetition of the same reference.

Line 124: The sentence making is inconsistent; some sentences start with the word "And", some statements were missing appropriate citations, or had wrong citations. Citation number serial needs correction, 14 after 12

Overall: Missing storytelling to knowledge gap identification and generation of the objective for this research. To construct, the suggested logical sequence would be, Football and football player, the strength and performance required by the player, what are the modalities of muscle strengthening exercise beneficial, the gaps in this process and knowledge that need to be explored, information on CT and HIIT and there testing method, like agility test etc., what needs to be explored and objectives of the study.

**Response**

The Introduction required substantial revision to improve conciseness, coherence, and logical flow. Accordingly, the Introduction section has been carefully reduced and reorganized.

The opinion-based sentence (Lines 64–66) has been omitted, and the general discussion on exercise practices in athletes (Line 76) has been removed to maintain focus specifically on football players. Sentences with repeated references have been merged to avoid redundancy. Issues related to sentence construction, inappropriate use of conjunctions (e.g., starting with "And"), missing or incorrect citations, and citation numbering errors have been corrected, and the reference sequence has been revised to ensure consistency.

In addition, the Introduction has been rewritten to follow a clear and logical narrative, progressing from:

- (i) the physiological and performance demands of football and football players;
- (ii) the importance of strength, agility, and repeated-sprint performance;
- (iii) relevant training modalities for performance enhancement;
- (iv) the existing knowledge gap in comparing HIIT and concurrent training; and
- (v) a clear statement of the study objectives.

These revisions strengthen the storytelling, improve readability, and clearly justify the need for the present study in alignment with the journal's expectations.

**29. Comment**

Table /figure: There was a duplication of results in the table, and figures were noted.

**Response**

The tables and figures have been carefully reviewed and revised to eliminate duplication of results. Redundant data presentation has been removed, and each table and figure now presents distinct and complementary information in accordance with the journal guidelines. This revision improves clarity and avoids unnecessary repetition.

**30. Comment** Acknowledgements: Please revise the acknowledgement. Mention the name with the role. Writing a manuscript is not considered as this was mentioned as an author contribution.

**Response** The Acknowledgements section has been revised to appropriately recognise individuals by name along with their specific roles or contributions to the study (*e.g.*, technical assistance, data collection support). Statements related to manuscript writing have been removed, as these contributions are already addressed in the author contribution section. This revision aligns with BSMMU Journal guidelines.

**31. Comment** References: Many of the references were older than 5 years. Also, many are missing with URL and PMID. Keep older references if necessary and provide citations from recent observations, from PUBMED and Scopus index journals.

**Response** The reference list has been thoroughly revised to improve its relevance and completeness. Where appropriate, older references have been retained due to their foundational importance, while recent and up-to-date studies from PubMed and Scopus-indexed journals have been added to strengthen the scientific context. In addition, missing URLs, PMIDs, and DOIs have been provided wherever available, and the reference list has been formatted consistently according to Vancouver style, as required by the journal.

**Executive editor:** M Mostafa Zaman, ORCID: [0000-0002-1736-1342](https://orcid.org/0000-0002-1736-1342)

**32. Comment**

1. Based on the editorial review, the following corrections are required:  
Please perform a repeated measures ANOVA to assess within-group pre- and post-test changes in agility and repeated sprint ability in the concurrent training group. Present the results in table format, including the mean difference, 95% confidence interval, and *p*-value (Table 1).
2. Please perform a repeated measures ANOVA to assess within-group pre- and post-test changes in agility and repeated sprint ability in the HIIT group. Present the results in table format, including the mean difference, 95% confidence interval, and *p*-value (Table 2).
3. Please perform a two-way ANOVA to compare post-intervention agility and repeated sprint ability performance between the concurrent training and HIIT groups. Present the results in table format, including the mean, standard deviation (SD), *F*-value, and *p*-value (Table 3).

**Response** We sincerely thank the Executive Editor for these clear and methodologically important recommendations. We agree that the use of repeated measures and two-way ANOVA strengthens the statistical rigor of the study. Accordingly, the requested analyses have now been performed and incorporated into the revised manuscript.

1. A repeated measures ANOVA has been conducted to assess within-group pre- and post-intervention changes in agility and repeated sprint ability in the Concurrent Training (CT) group. The results are presented in Table 1, including the mean difference, 95% confidence interval, and *p*-value.
2. Similarly, a repeated measures ANOVA has been conducted to assess within-group pre- and post-intervention changes in agility and repeated sprint ability in the HIIT group. The findings are presented in Table 2, including the mean difference, 95% confidence interval, and *p*-value.
3. A two-way ANOVA has been performed to compare post-intervention agility and repeated sprint ability performance between the CT and HIIT groups, examining group effects. The results are presented in Table 3, including the mean, standard deviation (SD), *F*-value, and *p*-value.

The Statistical analysis and results sections have been updated accordingly, and the tables have been added/modified to reflect these analyses. These revisions enhance the robustness, clarity, and interpretability of the study findings in line with the journal's expectations.