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Authors' Reply to Wewege et al: Comment on: "The training of short distance sprint performance in football code athletes: a systematic review and meta-analysis"

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Dear Editor,

We would like to thank Wewege et al., (1) for their kind and constructive comments regarding our recent systematic review and meta-analysis (2), which acknowledged our detailed methodology and pre-registration. Our review found 121 studies, including 3,419 athletes related to training interventions to improve football code athletes' short-sprint performance. We would also like to thank Wewege et al., (1) for highlighting some limitations within our statistical approach, where they suggest a *between-group effect* would have been more appropriate to evaluate the causality of the sprint training interventions rather than the pooling of *within group change* from pre- and post-intervention data.

We agree with Wewege et al. (1) that a between-group effect may be more appropriate to analyse training causality. However, given our aim was to synthesise findings from the full range of research available, a pairwise meta-analysis was not optimal due to the multiple research designs included within our systematic review. We took a similar approach to previous meta-analyses within sports performance (3-5). The research designs within our systematic review included comparisons across multiple training subgroups (i.e., primary, secondary, combined-specific, tertiary, combined and sport only), comparing experimental randomised control trials (e.g., (6)), cross over trials (e.g., (7)), between quasi-experimental parallel designs (e.g., tertiary vs. combined; (8)), within training mode comparisons (e.g., secondary vs. secondary; (9)) and exploratory research with no comparative group (n=7; e.g., (10)). When considered alongside how our review addressed previous limitations within the literature (e.g., several methods not accounted for, small samples of the available literature or a lack of focus on football code athletes) and the further analysis undertaken within our meta-analysis (i.e., heterogeneity, sensitivity, small study effects, moderator analysis) we still believe our review is able to advance the knowledge of short-sprint development.

In summary, Wewege et al. (1) highlight some important considerations for the statistical approach used within the meta-analyses using comparative groups. Although the nature of applied research means that no study alone is likely to prove causality, through a narrower research design and an increase in randomised control trials, future research may support our findings whether mode-specific training interventions improve short-sprint performance in football code athletes. Our findings suggest that short-sprint performance can be enhanced by increasing either or both the magnitude and the orientation of force an athlete can generate in the sprinting action, which agrees with previous reviews (11, 12).

Declarations

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Conflict of Interest

Ben Nicholson, Alex Dinsdale, Ben Jones and Kevin Till declare they have no potential conflicts of interest concerning the content of this letter.

Authors' contributions

All the authors contributed to drafting the manuscript, edited the manuscript, read and approved the final manuscript before submission.

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