nutrients

MDPI

Supplementary Material

Table S1. List of excluded studies in each level.

Exclusion level	Studies
Duplication	(Astley et al., 2017; M. Athayde et al., 2018; M. S. D. Athayde et al., 2018; Athayde et al., 2019; Carmo et al., 2021; Cortez et al., 2017; Coswig et al., 2018; Da Silva Athayde et al., 2018; de Azevedo, Guerra, Caldas, & Guimaraes-Ferreira, 2019; de Azevedo, Guerra, Caldas, & Guimarães-Ferreira, 2019; Diaz-Lara, Del Coso, Garcia, et al., 2016; Diaz-Lara, Del Coso, García, et al., 2016a, 2016b; Diaz-Lara, del Coso, Portillo, Areces, Garcia, et al., 2016; Diaz-Lara, Del Coso, Portillo, Areces, et al., 2016a, 2016b; Durkalec-Michalski, Nowaczyk, Glowka, et al., 2019; Durkalec-Michalski, Nowaczyk, Główka, et al., 2019; Felippe et al., 2016; Filip-Stachnik et al., 2021a, 2021b; Grgic et al., 2021a; Lopes-Silva et al., 2014; Lopes-Silva et al., 2022; Lopes-Silva, Santos, et al., 2015; Lopes-Silva, Silva Santos, et al., 2015; Lopez-Gonzalez et al., 2018a; López-González et al., 2018; Merino-Fernandez et al., 2022; Merino-Fernández et al., 2022; Merino Fernández et al., 2021; Ouergui et al., 2022; Pak İ et al., 2020; Rezaei et al., 2019; Saldanha da Silva Athayde et al., 2019a, 2019b; Santos et al., 2014; Simoncini et al., 2021b)
Title	(Candia-Lujan et al., 2014; Diaz-Manzano et al., 2018; Eliasson et al., 2018; Grgic et al., 2021b; Harty et al., 2019; Hemmersbach, 2008; Hoffman et al., 2014; Lee et al., 2014; Lieberman et al., 2014; Lopes-Silva et al., 2018; Lopez-Gonzalez et al., 2018b; Pak et al., 2020; Rocha et al., 2016; Simoncini et al., 2021a; Sterkowicz-Przybycien et al., 2019; Yamazaki et al., 2019)
Abstract	(Congeni & Miller, 2002; Lin et al., 2014; Lopes-Silva et al., 2020; Reale et al., 2017; Striegel et al., 2005)
Full text	(Balko et al., 2020; Vidal & Prado, 2020)

Table S2. Results of the Begg and Mazumdar's Rank Correlation Test and Egger's Linear Regression Test

	Begg and Mazumdar's Rank Correlation Test							Egger's Linear Regression Test					
	Kendall's S statistic P-Q	Tau without continuity correction	Z	P	Tau with continuity correction	Z	P	Intercept	SE	95% confidence interval	t	df	p
CMJ	1	0.048	0.15	0.88	0	0	1	-0.14	2.59	-6.80 to 6.51	0.06	5	0.96
Handgrip strength	2	0.20	0.49	0.62	0.10	0.24	0.81	-1.60	7.29	-24.80 to 21.61	0.22	3	0.84
JGST	-1	0.33	0.52	0.60	0	0	1	-3.77	6.06	-80.80 to 73.26	0.62	1	0.64
SJFT throws	10	0.36	1.24	0.22	0.32	1.11	0.27	3.64	2.75	-3.09 to 10.37	1.32	6	0.23
SJFT index	-7	-0.33	1.05	0.29	-0.29	0.90	0.37	-6.06	1.97	-11.12 to -0.99	3.07	5	0.03
RPE-post anaerobic test	-9	-0429	1.35	0.176	-0.38	1.20	0.23	-1.44	3.16	-9.56 to 6.68	0.46	5	0.67
RPE-post combat	-2	-0.33	0.679	0.496	-0.167	0.34	0.73	-55.69	24.36	-160.50 to 49.11	2.29	2	0.15
Offensives actions (N)	-8	-0.286	0.99	0.32	-0.25	0.87	0.39	-0.83	3.37	-9.08 to 7.40	0.25	6	0.81
Offensives actions (s)	0	0	0	1	0	0	1	7.80	27.34	-109.84 to 125.43	0.29	2	0.80
[La] (anaerobic)	6	0.60	1.47	0.14	0.50	1.22	0.22	6.19	1.01	2.98 to 9.41	6.13	3	0.009
[La] (combats)	9	0.60	1.69	0.09	0.53	1.50	0.13	5.39	1.17	2.13 to 8.65	4.60	4	0.01
HR final	-3	-0.2	0.56	0.57	-0.13	0.38	0.70	-0.46	2.72	-8.007 to 7.09	0.17	4	0.87
HR 1min	-5	-0.33	0.94	0.35	-0.27	0.75	0.45	-1.61	2.13	-7.51 to 4.30	0.76	4	0.49
HR end-of fight	6	1	2.04	0.04	0.83	1.70	0.09	27.94	11.85	-23.05 to 78.92	2.36	2	0.14

RPE: Rating of Perceived Exertion; HR: Heart Rate; [La]: Blood Lactate; CMJ: Countermovement jump; SJFT: Special Judo Fitness Test

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Supplementary Figures

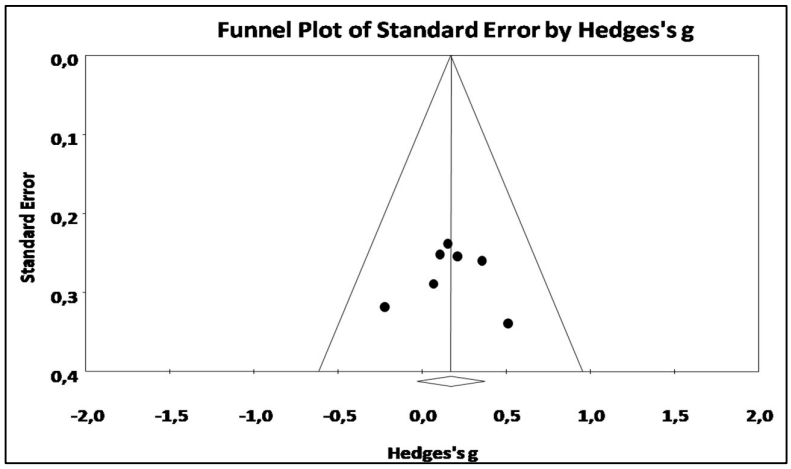

Figure S1. Funnel plot for CMJ showing no evidence of publication bias.

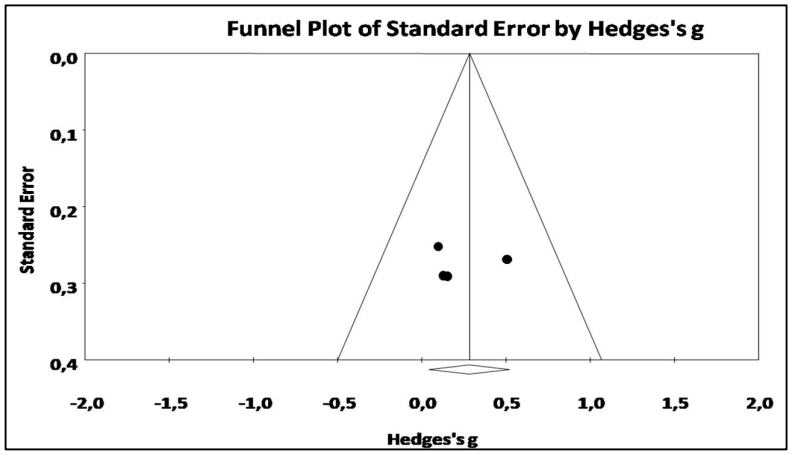

Figure S2. Funnel plot for handgrip strength showing no evidence of publication bias.

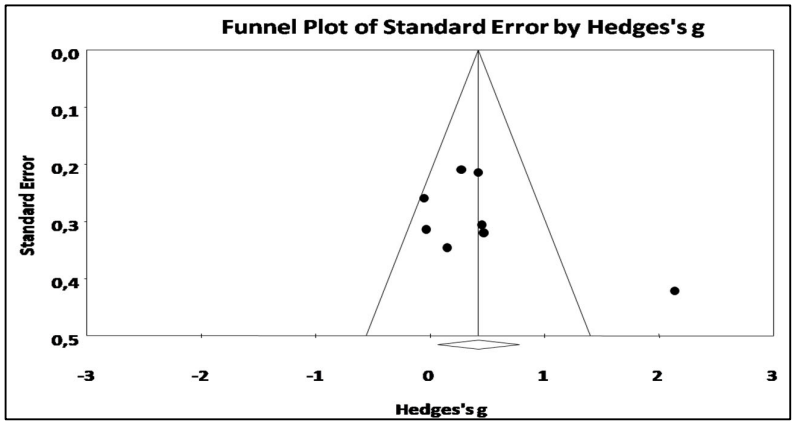

Figure S3. Funnel plot for SJFT number of throw showing no evidence of publication bias.

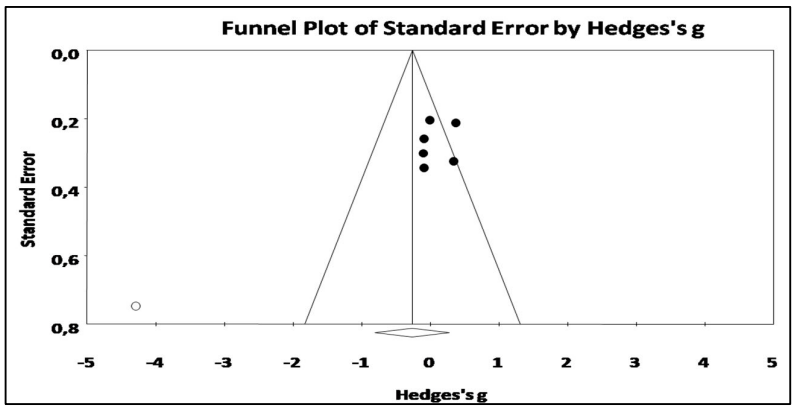

Figure S4. Funnel plot for SJFT index showing an evidence of publication bias.

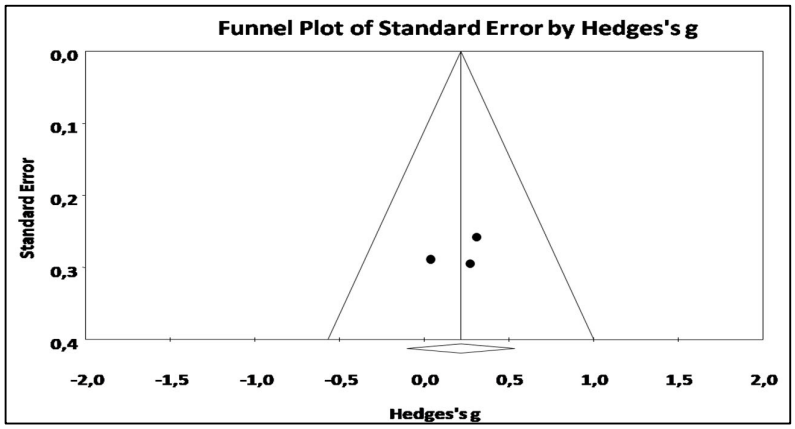

Figure S5. Funnel plot for judogi strength endurance test showing no evidence of publication bias.

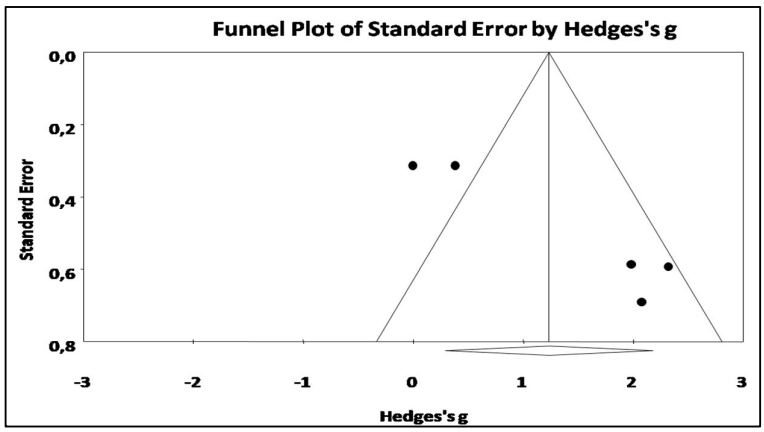

Figure S6. Funnel plot for [La] post-anaerobic exercise showing an evidence of publication bias.

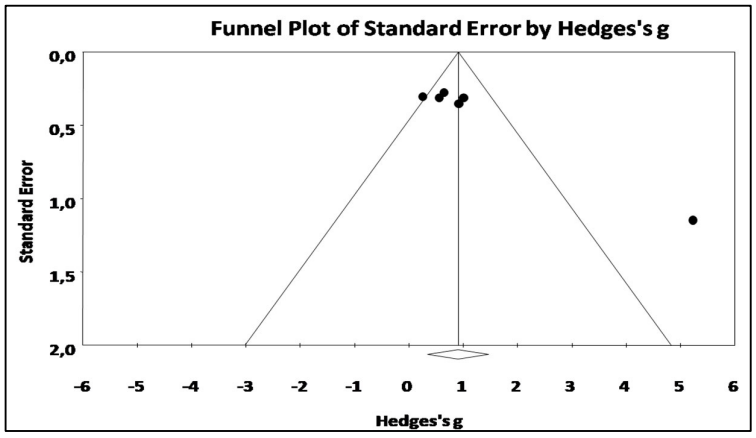

Figure S7. Funnel plot for [La] post-combat showing an evidence of publication bias.

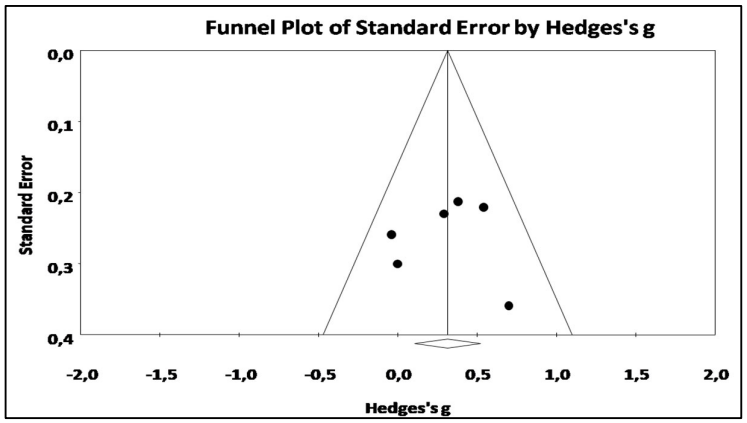

Figure S8. Funnel plot for HR final showing no evidence of publication bias.

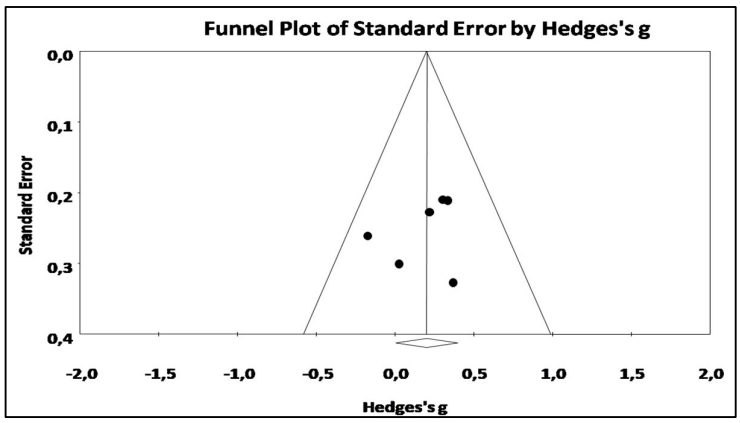

Figure S9. Funnel plot for HR 1min showing no evidence of publication bias.

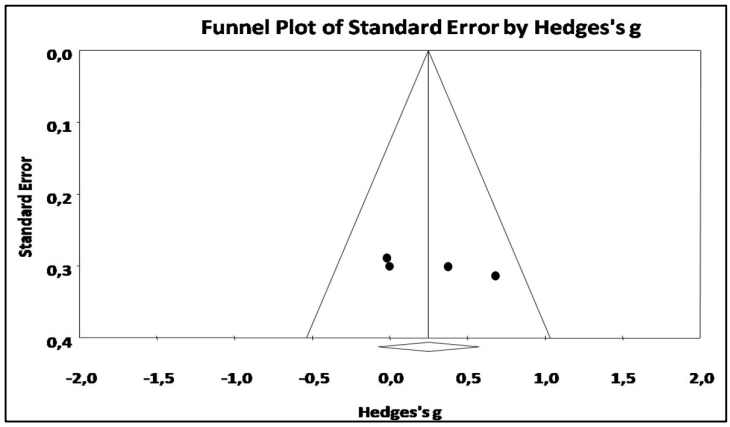

Figure S10. Funnel plot for HR post-combat showing no evidence of publication bias.

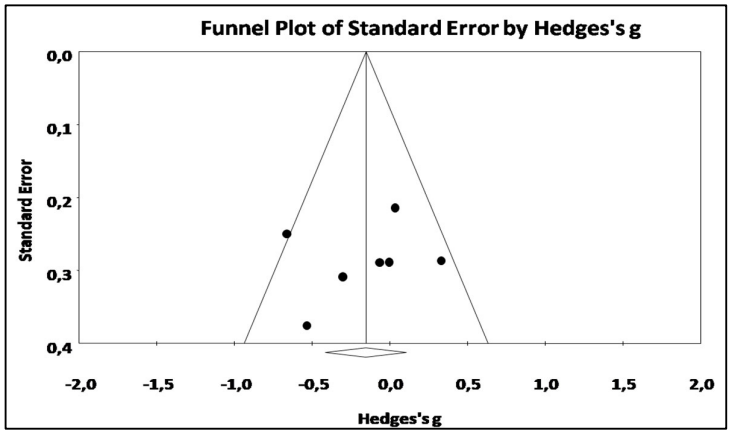

Figure S11. Funnel plot for RPE post-anaerobic test showing no evidence of publication bias.

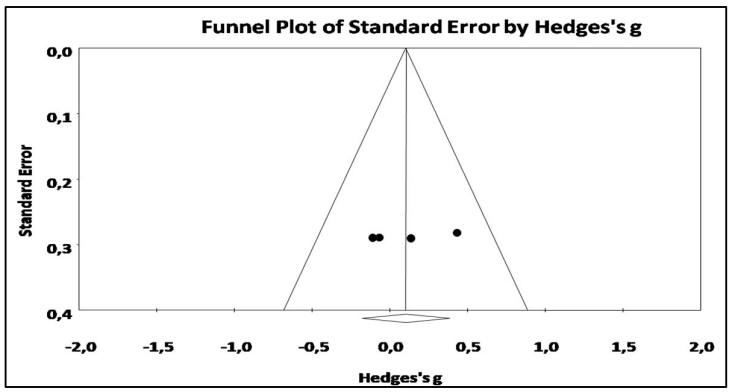

Figure S12. Funnel plot for RPE post-combat showing no evidence of publication bias.

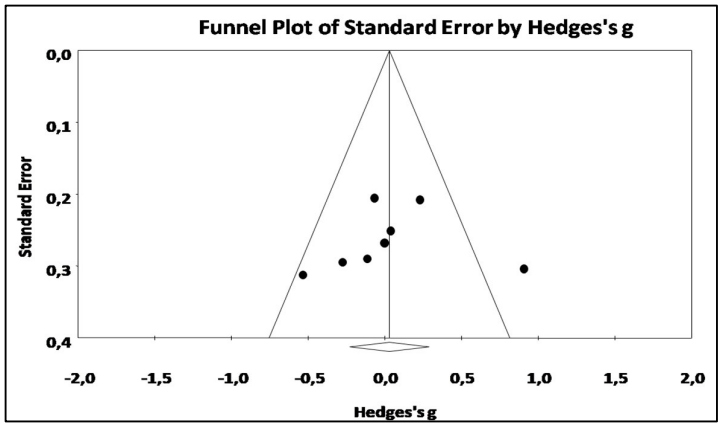

Figure S13. Funnel plot for the number of offensives actions showing no evidence of publication bias.

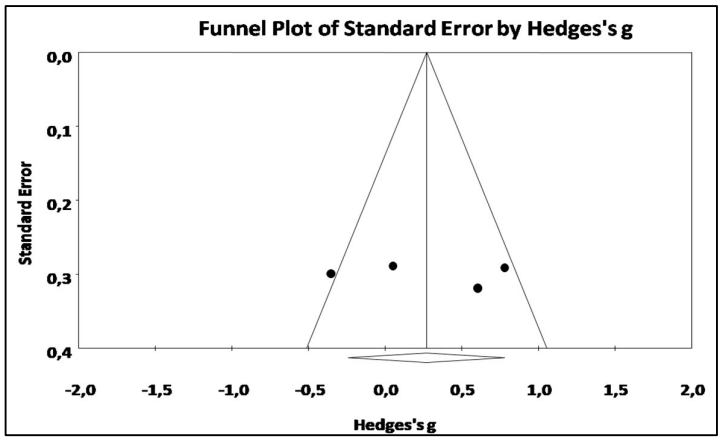

Figure S14 | Funnel plot for offensives actions duration showing no evidence of publication bias.

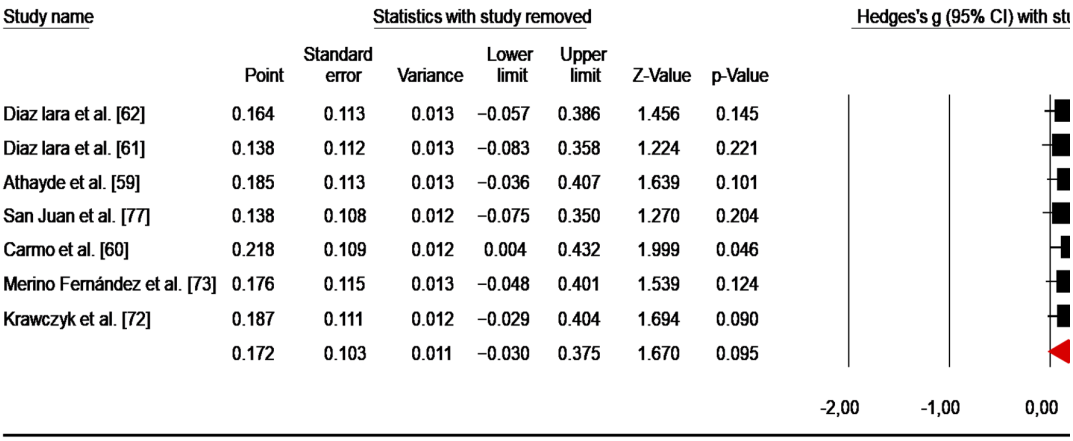

Figure S15. Forest plot of the leave-one-out sensitivity analysis for CMJ.

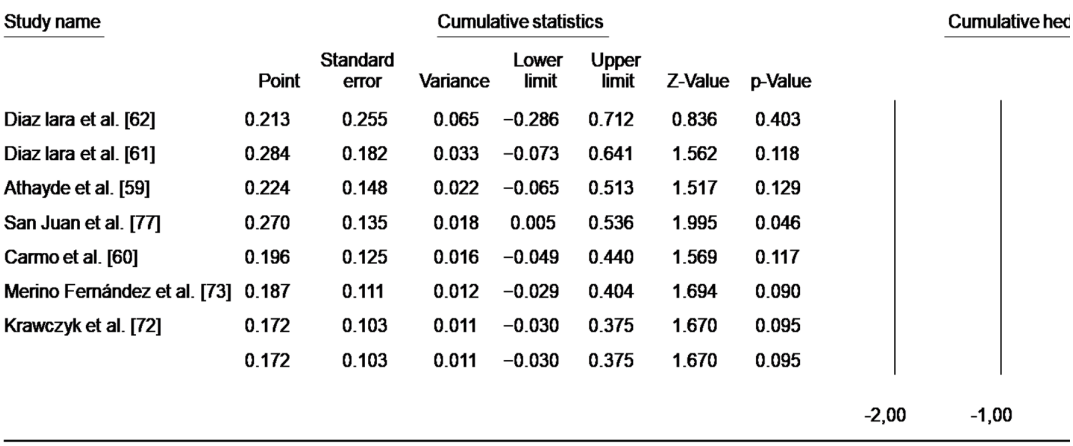

Figure S16. Forest plot of the cumulative meta-analysis for CMJ.

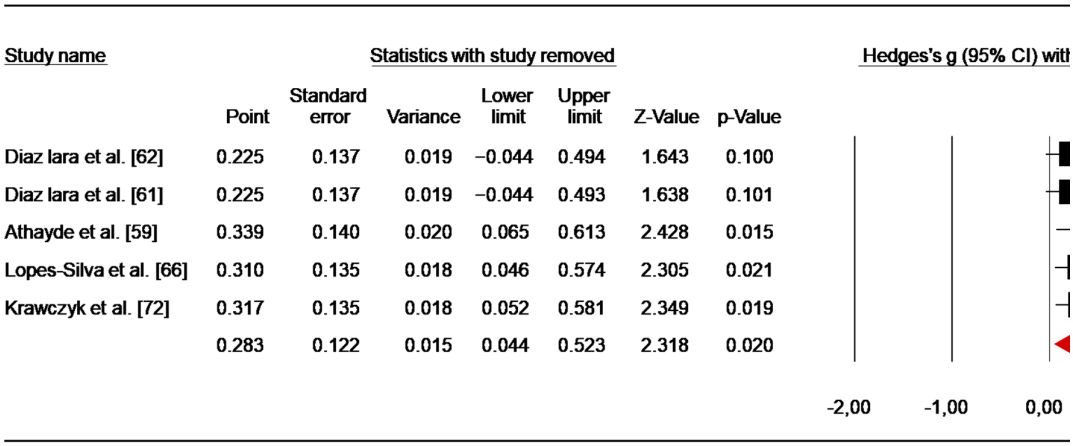

Figure S17. Forest plot of the leave-one-out sensitivity analysis for handgrip-strenght.

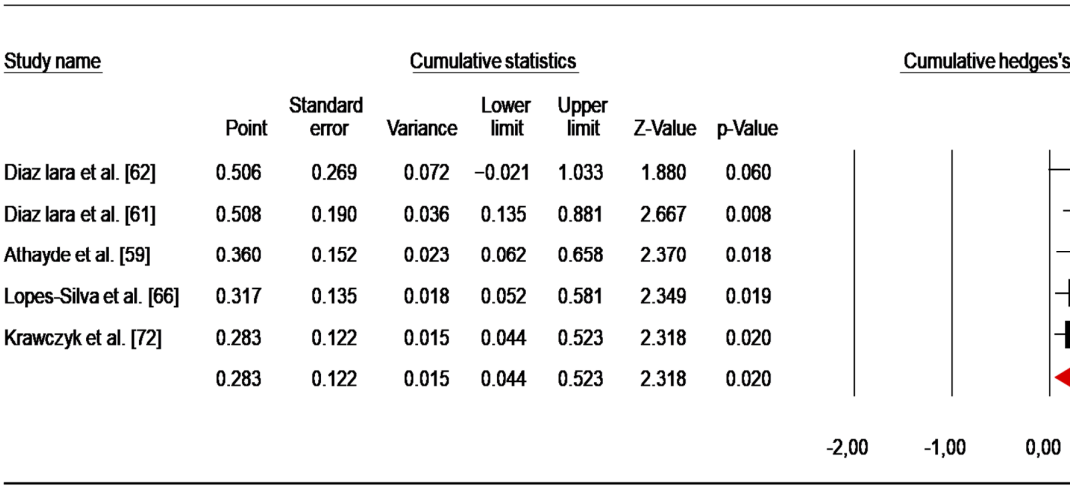

Figure S18. Forest plot of the cumulative meta-analysis for handgrip-strenght.

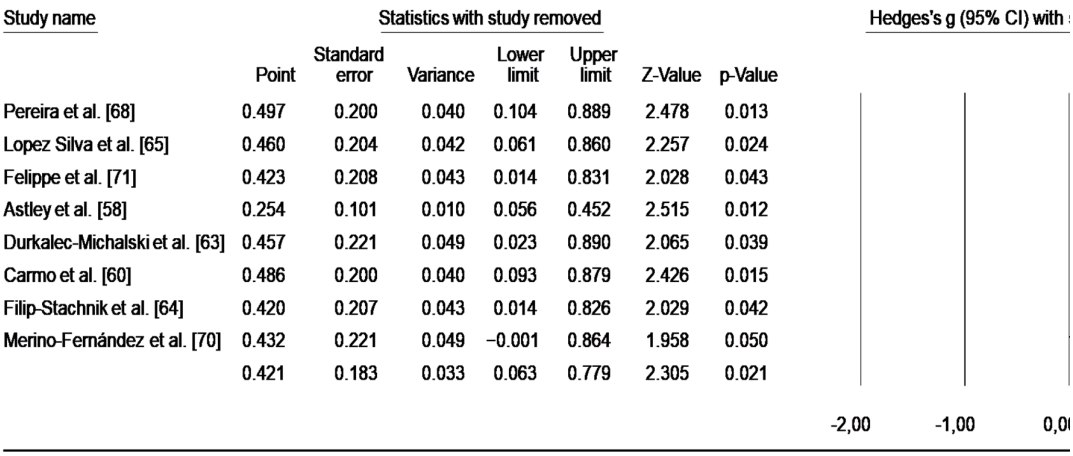

Figure S19. Forest plot of the leave-one-out sensitivity analysis for toatal number of throws during the SJFT.

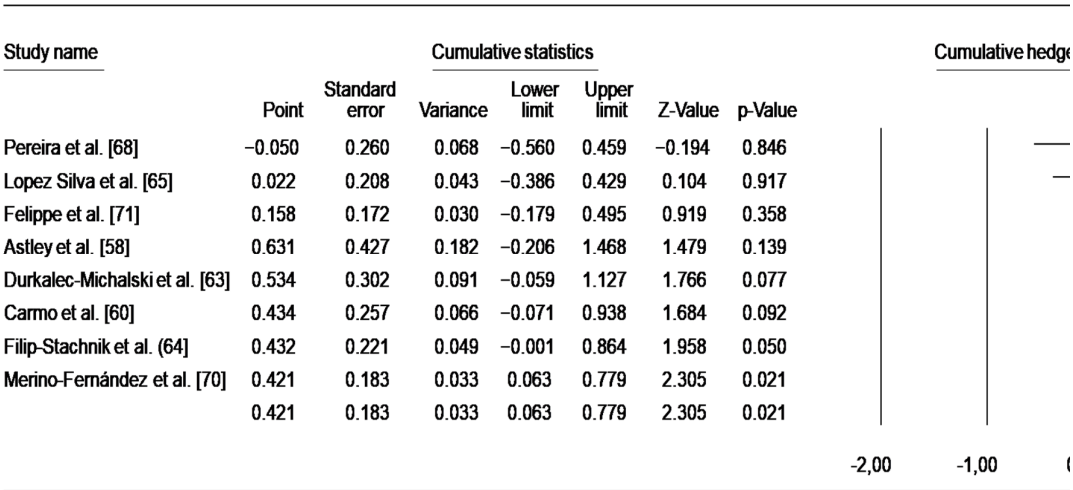

Figure S20. Forest plot of the cumulative meta-analysis for toatal number of throws during the SJFT.

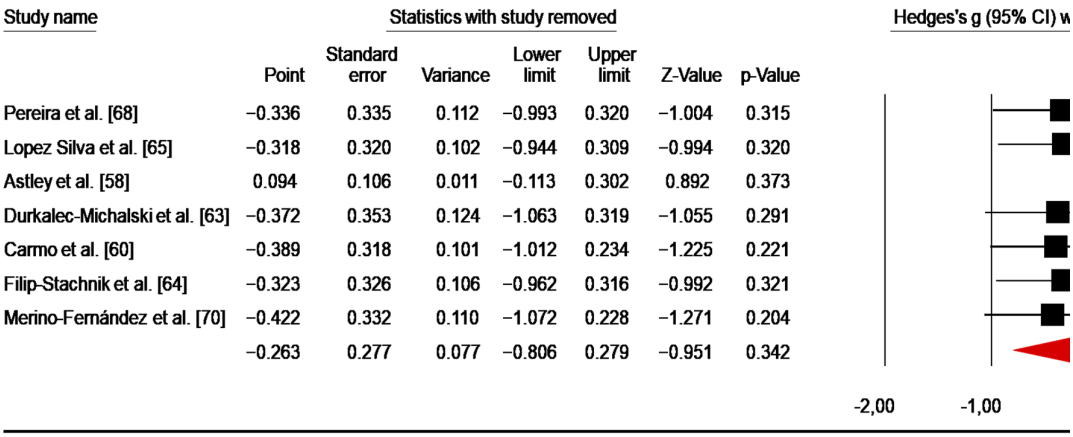

Figure S21. Forest plot of the leave-one-out sensitivity analysis for SJFT index.

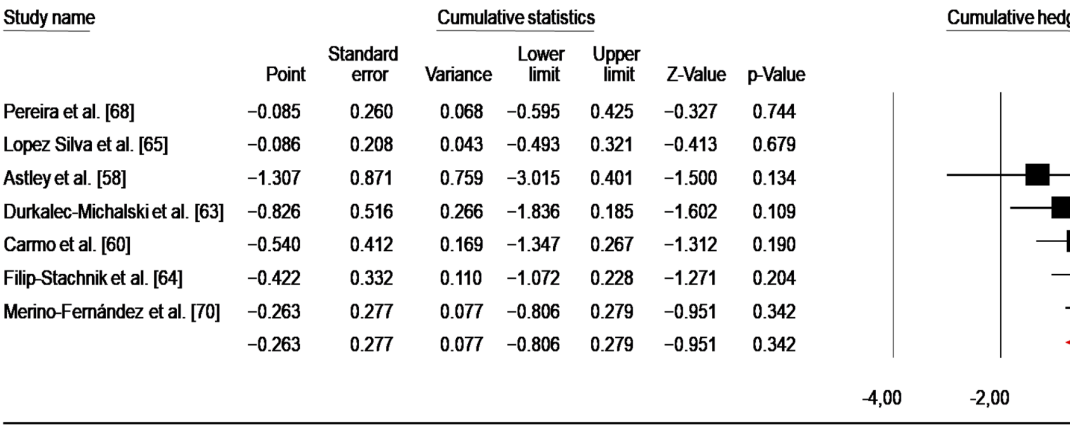

Figure S22. Forest plot of the cumulative meta-analysis for SJFT index.

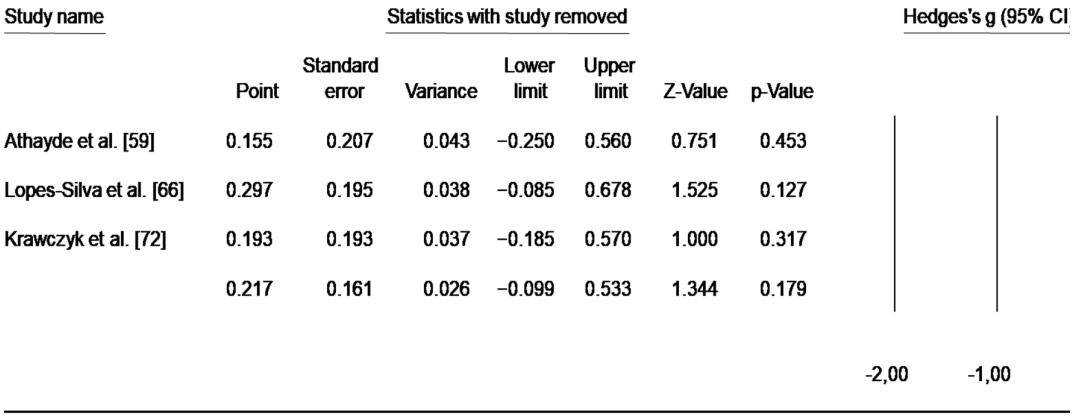

Figure S23. Forest plot of the leave-one-out sensitivity analysis for the judogi strength endurance test.

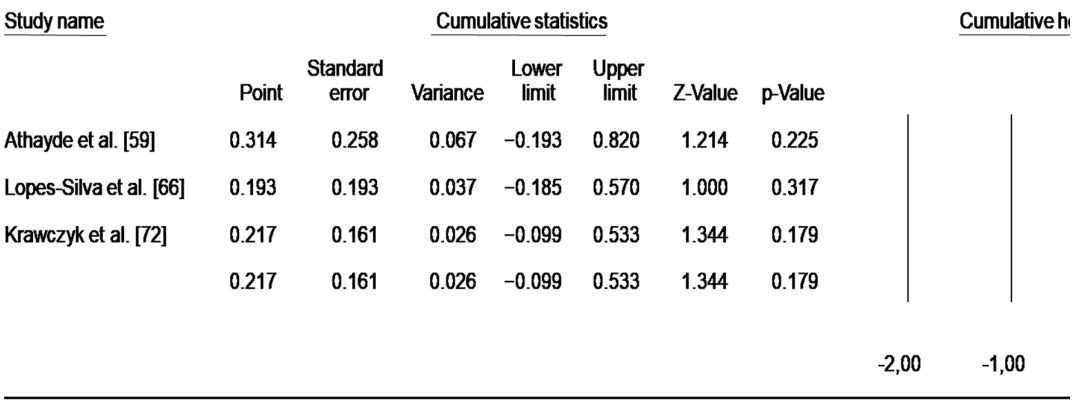

Figure S24. Forest plot of the cumulative meta-analysis for the judogi strength endurance test.

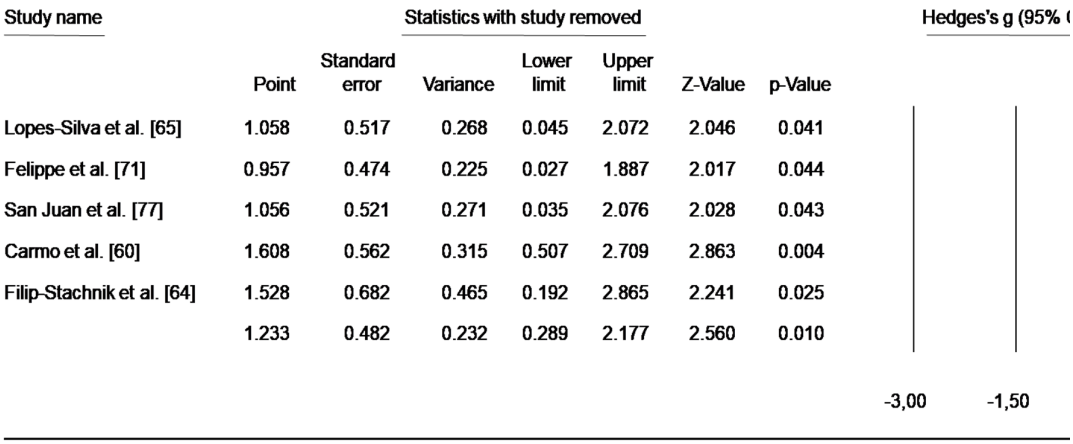

Figure S25. Forest plot of the leave-one-out sensitivity analysis for [La] post-anaerobic exercise.

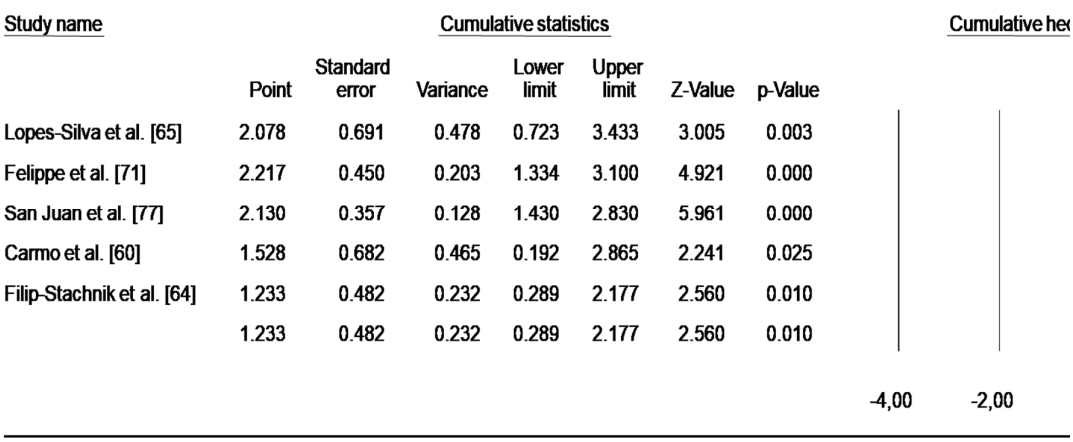

Figure S26. Forest plot of the cumulative meta-analysis for [La] post-anaerobic exercise.

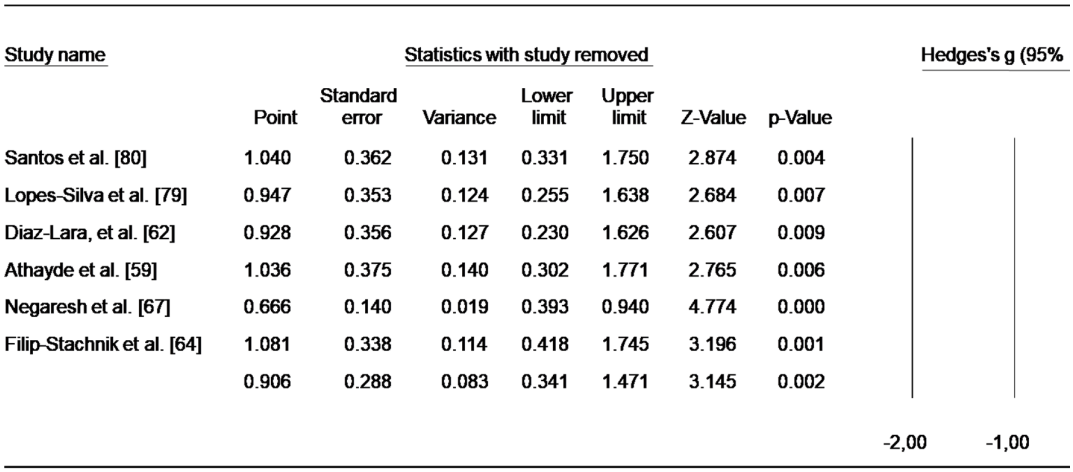

Figure S27. Forest plot of the leave-one-out sensitivity analysis for [La] post-combat.

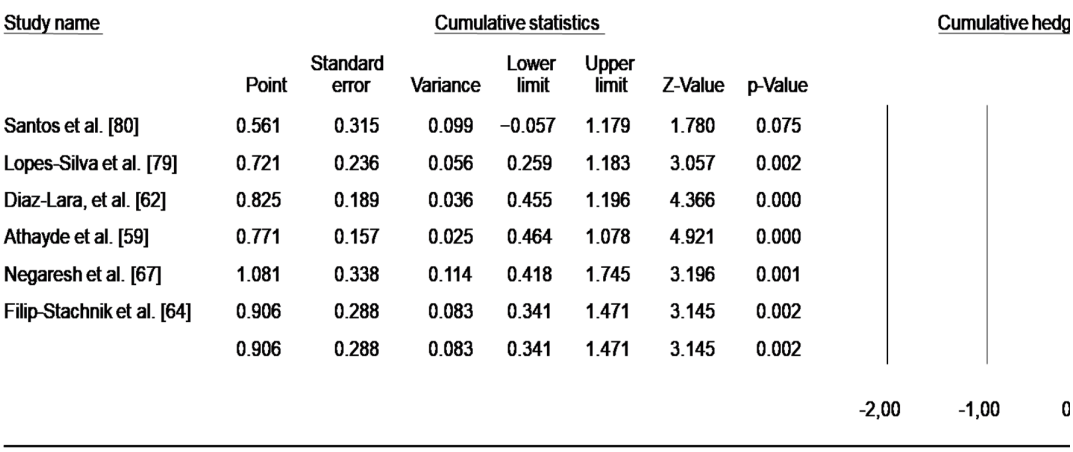

Figure S28. Forest plot of the cumulative meta-analysis for [La] post-combat.

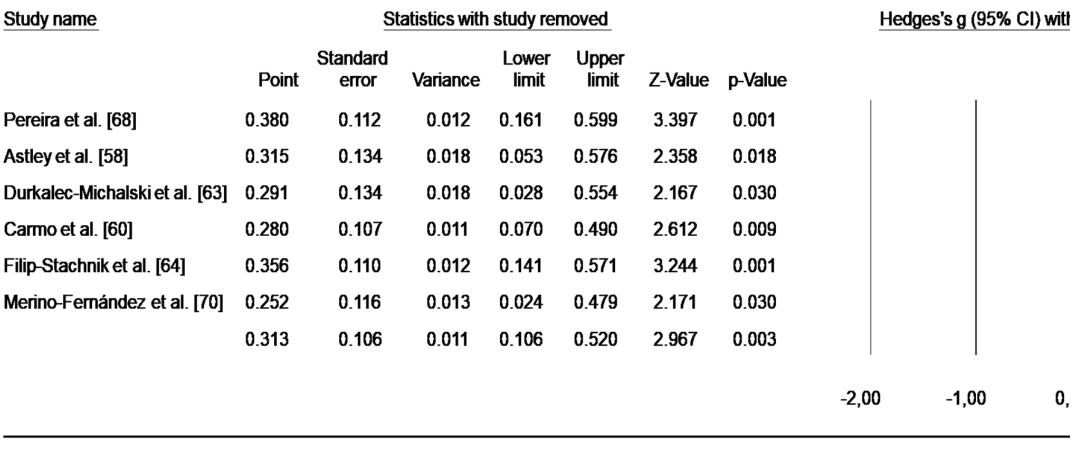

Figure S29. Forest plot of the leave-one-out sensitivity analysis for HR final

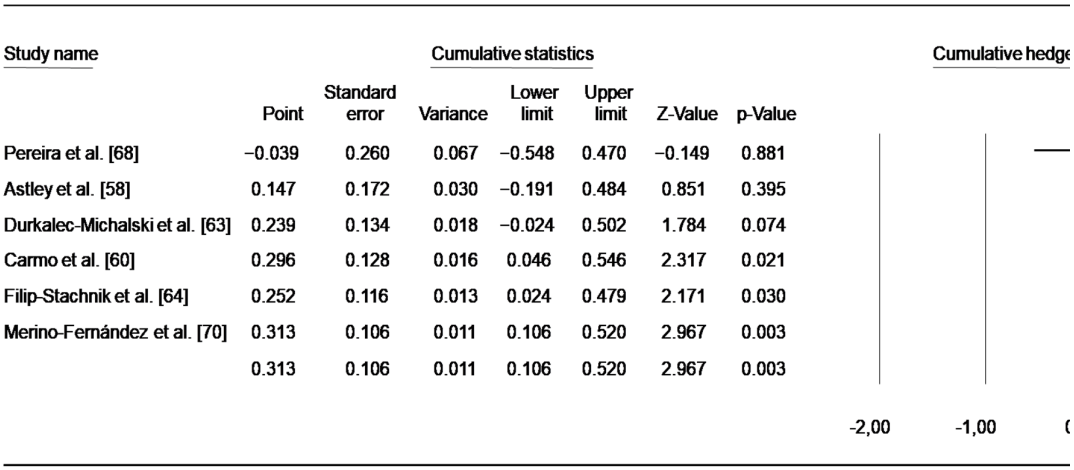

Figure S30. Forest plot of the cumulative meta-analysis for HR final.

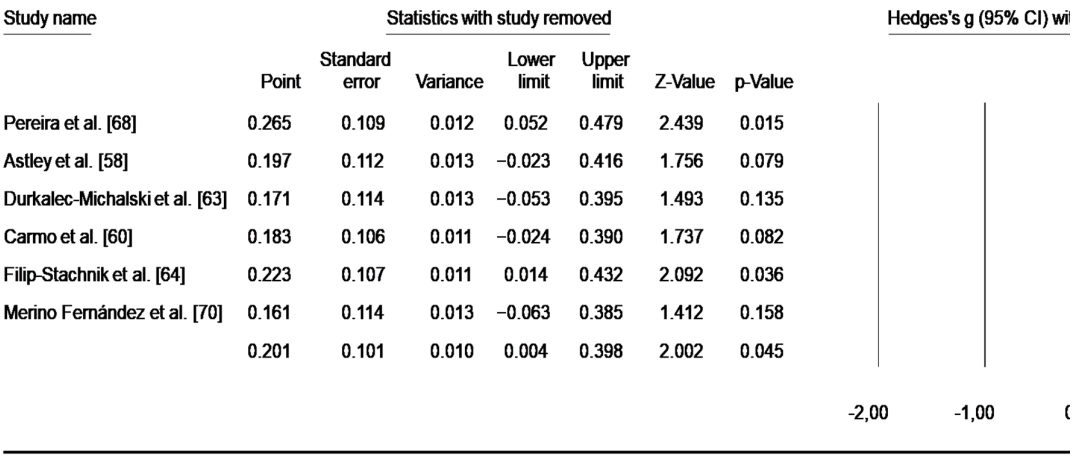

Figure S31. Forest plot of the leave-one-out sensitivity analysis for HR 1 min.

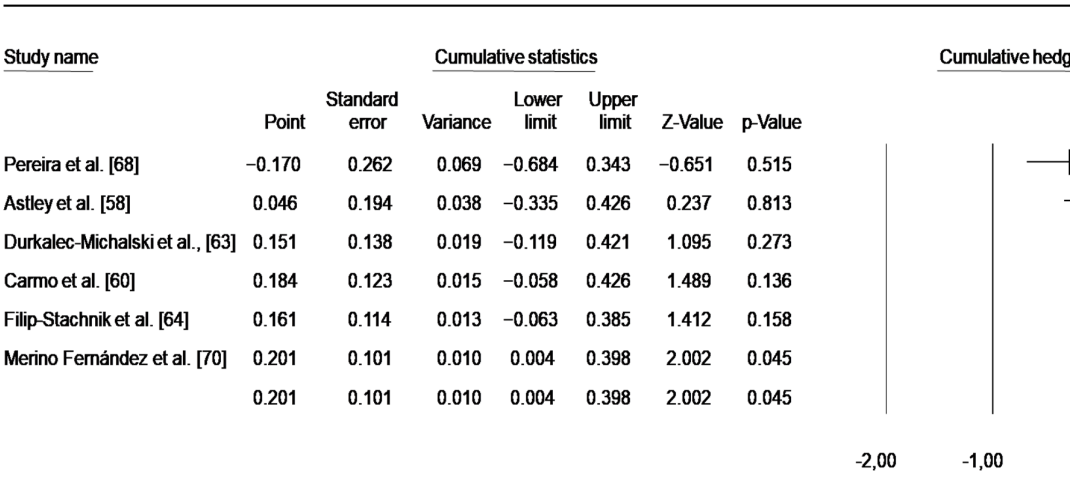

Figure S32. Forest plot of the cumulative meta-analysis for HR 1 min.

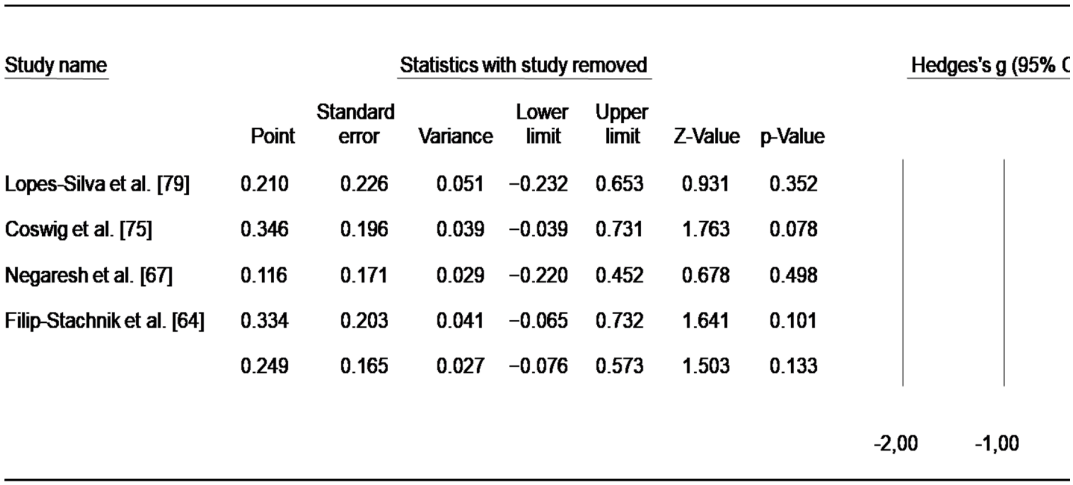

Figure S33. Forest plot of the leave-one-out sensitivity analysis for HR at the end-of-fight.

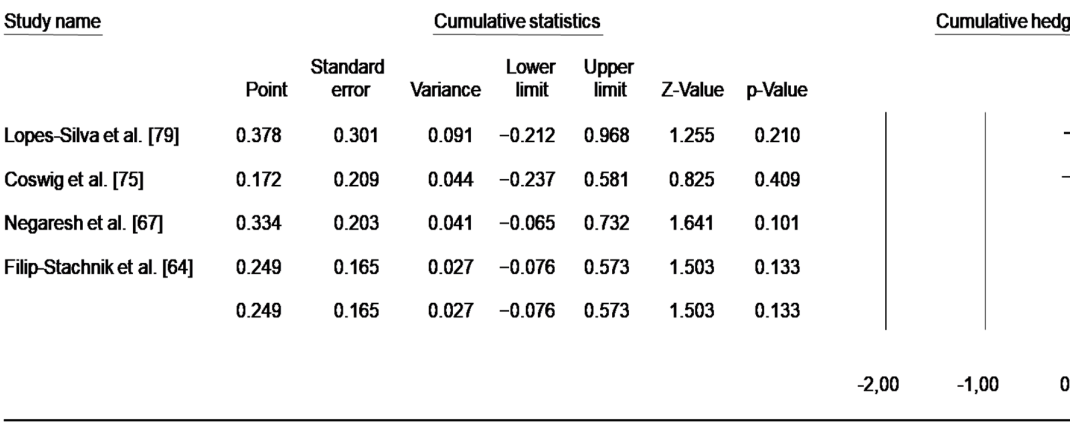

Figure S34. Forest plot of the cumulative meta-analysis for HR at the end-of-fight.

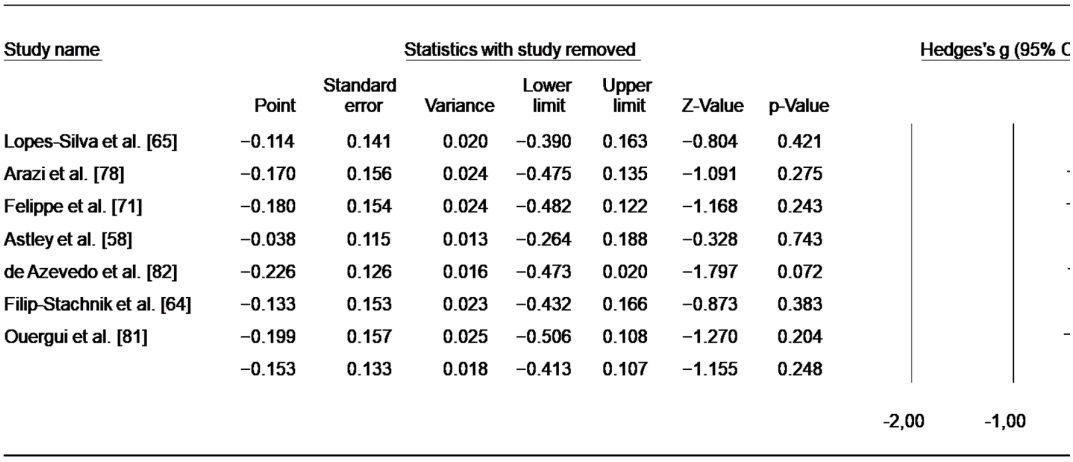

Figure S35. Forest plot of the leave-one-out sensitivity analysis for RPE post-anaerobic exercise.

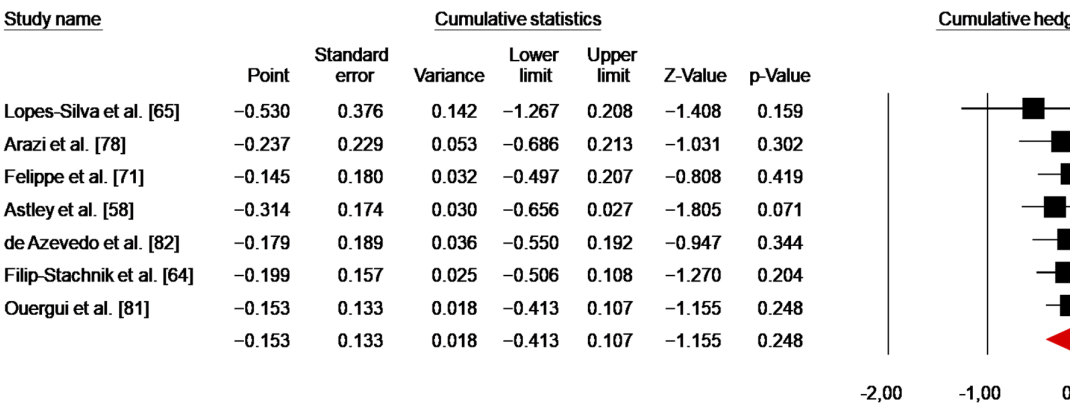

Figure S36. Forest plot of the cumulative meta-analysisfor RPE post-anaerobic exercise.

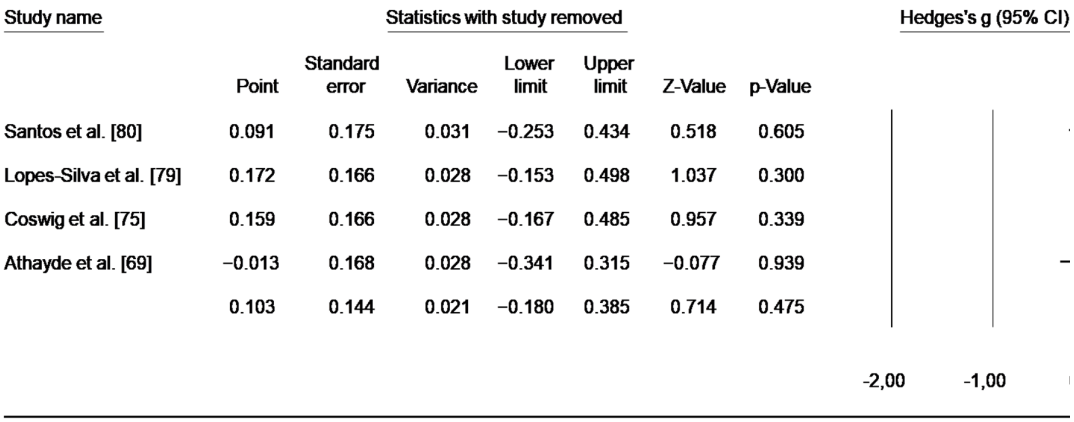

Figure S37. Forest plot of the leave-one-out sensitivity analysis for RPE post-combat.

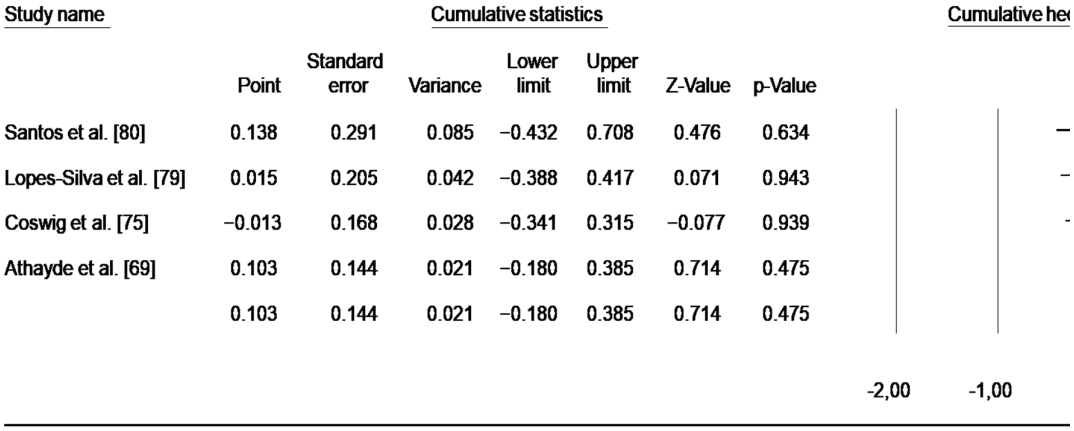

Figure S38. Forest plot of the cumulative meta-analysis for RPE post-combat.

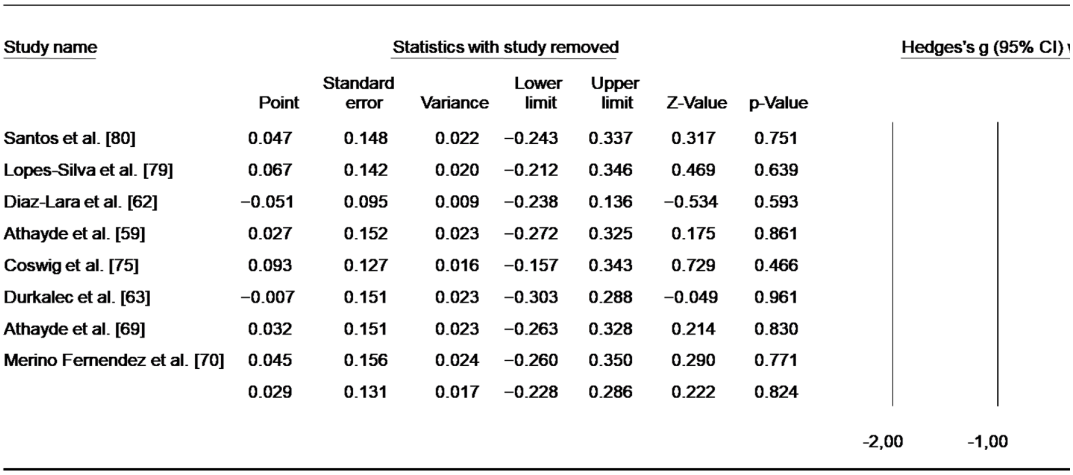

Figure S39. Forest plot of the leave-one-out sensitivity analysis for the number of offensives actions.

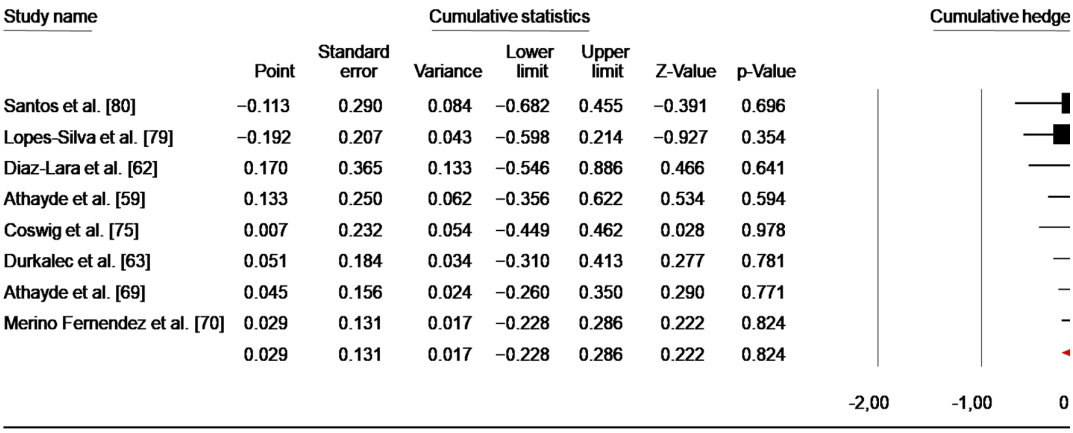

Figure S40. Forest plot of the cumulative meta-analysis for the number of offensives actions.

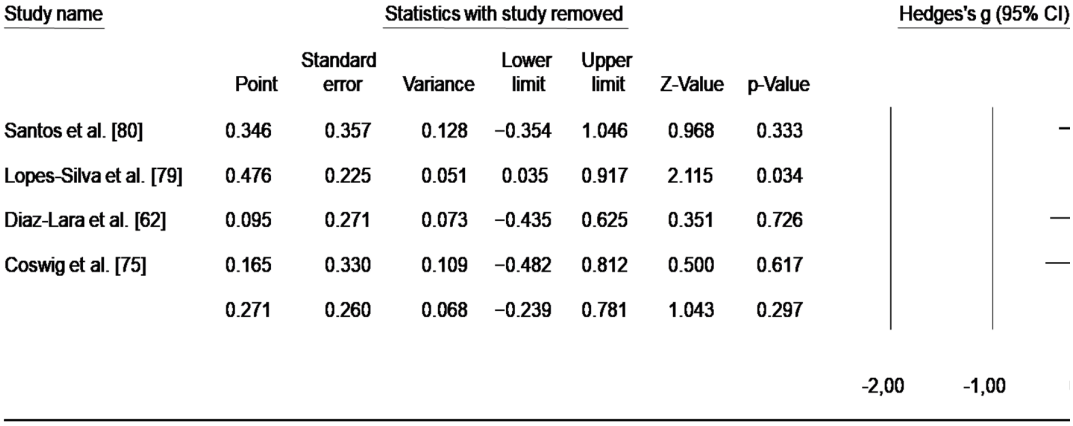

Figure S41. Forest plot of the leave-one-out sensitivity analysis for the duration of offensives actions.

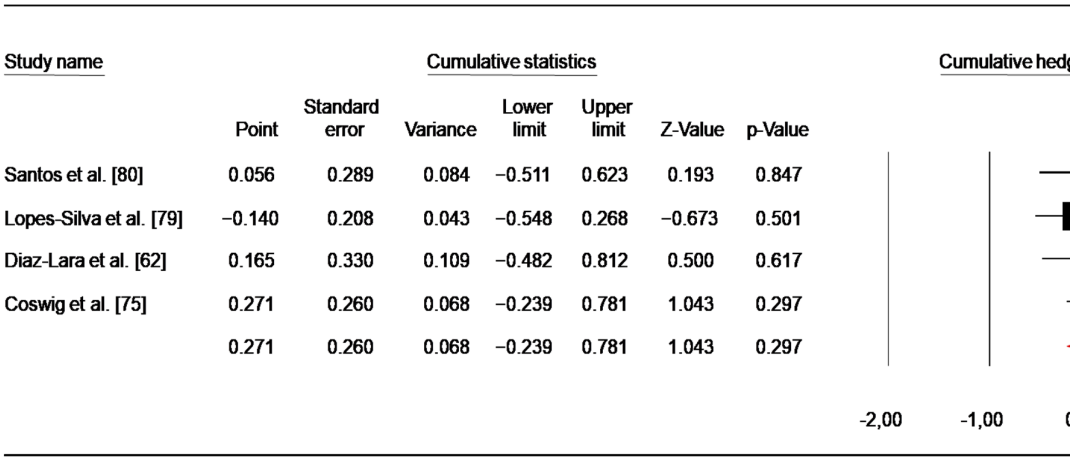

Figure S42. Forest plot of the cumulative meta-analysis for the duration of offensives actions.

PRISMA 2020 Main Checklist

Topic	No.	Item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Title (p.1)
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist	Abstract (p.1-2)
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Introduction (p. 2-4)
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Introduction (p.4)
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Eligibility criteria(p.4)
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Search strategy (p.5)
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Search strategy (p.5)

Topic	No.	Item	Location where item is reported
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Selection process (p.5-6)
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Data extraction and coding (p.6)
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Data extraction and coding (p.6)
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Data extraction and coding (p.6)
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Risk of bias assessment (p.6-7)
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Data synthesis and analyses (p.7)
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item 5)).	Data synthesis and analyses (p.7-8)
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Data synthesis and analyses (p.7-8)
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Data synthesis and analyses (p.7-8)
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Data synthesis and analyses (p.7-8)

Topic	No.	Item	Location where item is reported
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Data synthesis and analyses (p.7-8)
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Data synthesis and analyses (p.7-8)
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Data synthesis and analyses (p.8)
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Certainty was no assessed
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Search results (p.8)
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Search results (p.8)
Study characteristics	17	Cite each included study and present its characteristics.	Studies characteristics (p.8-10)
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Risk of bias assessment (p.11)
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Meta-analysis results (p.11-17)
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Meta-analysis results (p.11-17)
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Meta-analysis results (p.11-17)
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Meta-analysis results (p.11-17)
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Stability and reliability of the results (p.17)

Topic	No.	Item	Location where item is reported
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Meta-analysis results (p.11-17)
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Certainty was no assessed
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Discussion (p.18-35)
	23b	Discuss any limitations of the evidence included in the review.	Methodological recommendations (p.35-37)
	23c	Discuss any limitations of the review processes used.	Strength, limitations and perspectives (p.37-38)
	23d	Discuss implications of the results for practice, policy, and future research.	Strength, limitations and perspectives (p.37-38)
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Not assessed
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Not assessed
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Not assessed)
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Funding(p.39)
Competing interests	26	Declare any competing interests of review authors.	Conflict of interest(p.39)
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Data availability statement(p.39)

PRIMSA Abstract Checklist

Topic	No.	Item	Reported?
TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Yes
Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	No
Synthesis of results	6	Specify the methods used to present and synthesize results.	Yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	Yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	Yes
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	No
Interpretation	10	Provide a general interpretation of the results and important implications.	Yes
OTHER			
Funding	11	Specify the primary source of funding for the review.	No
Registration	12	Provide the register name and registration number.	No