INPLASY PROTOCOL

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Conflicts of interest:
No conflicts of interest.

Effects of small-sided games vs. running-based high intensity interval training repeated-sprint ability in soccer players: A meta-analytical comparison

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Review question / Objective: **This systematic review with meta-analysis (SRMA) was conducted to compare the effects of SSG-based interventions vs. running-based HIIT interventions on soccer players' repeated sprint ability.**
Condition being studied: **Small-sided games.**
Information sources: **Original per-reviewed articles written in English that provided full-text**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 31 August 2020 and was last updated on 31 August 2020 (registration number INPLASY202080129).

INTRODUCTION

Review question / Objective: **This systematic review with meta-analysis (SRMA) was conducted to compare the effects of SSG-based interventions vs. running-based HIIT interventions on soccer players' repeated sprint ability.**

Rationale: **Small-sided games (SSG) are popular drill-based exercises used in soccer to achieve specific tactical/ technical issues while try to promote similar stimulus to running-based high intensity interval training (HIIT). Despite a good knowledge about the comparisons of**

both type of training modes in aerobic performance, there are a lack of systematization in determinant qualities as repeated-sprint ability (RSA).

Condition being studied: Small-sided games.

METHODS

Search strategy: A comprehensive computerized search of the following electronic databases was performed: (i) Web of Science; (ii) Scopus; (iii) SPORTdiscus; and (iv) PubMed. The searching process for relevant publications had no restriction regarding year of publication and included articles retrieved until 31th August 2020. The following search strings were employed: ("soccer" OR "football") AND ("small-sided games" OR "drill-based games" OR "sided-games" OR "SSG" OR "conditioned games" OR "small-sided and conditioned games" OR "reduced games" OR "play formats") AND ("repeated sprint ability").

Participant or population: Soccer players.

Intervention: Small-sided games group.

Comparator: Running-based high intensity interval training group.

Study designs to be included: Parallel studies.

Eligibility criteria: The a priori inclusion criteria for this review were as follows: (i) parallel randomized studies (SSG-based programs vs. running-based HIIT) conducted in soccer players with no restriction of age, sex or competitive level; (ii) isolated intervention programs (i.e. only SSG vs. only running-based HIIT - not combined forms) with no restrictions for duration; (iii) a pre-post outcome for RSA; (iv) original per-reviewed articles written in English that provided full-text.

Information sources: Original per-reviewed articles written in English that provided full-text.

Main outcome(s): The RSA was collected based on the mean time (s) or total time (s) in a series of multiple sprints.

Quality assessment / Risk of bias analysis: The methodological index for non-randomized studies (MINORS) was used (Slim et al., 2003) to assess the parallel studies. Twelve items were analyzed, in which 0 represented cases of no report, 1 cases of report but inadequate, and 2 in cases of report and adequate.

Strategy of data synthesis: The outcomes chosen for this SRMA included RSA measured at field-based tests. The RSA was collected based on the mean time (s) or total time (s) in a series of multiple sprints. Additionally, the following information was extracted from the included studies: (i) number of participants (n), age (years), competitive level (if available) and sex; (ii) the SSGs format and pitch size (if available); (iii) period of intervention (number of weeks) and number of sessions per week (n/w); and (iv) regimen of intervention (work duration, work intensity, modality, relief duration, relief intensity, repetitions and series, between-set recovery).

Subgroup analysis: Intervention duration (weeks); Total sessions (n); Age; Sex.

Sensibility analysis: The extended Egger's test (Egger, Smith, Schneider, & Minder, 1997) was used to assess the risk of bias across the studies. In case of bias, a sensitivity analysis was conducted.

Language: English.

Country(ies) involved: Portugal; Chile.

Keywords: football; athletic performance; drill-based games; interval training; repeated sprint.

Contributions of each author:
Author 1 - Filipe Manuel Clemente - Head of the project; data search; methodological assessment; qualitative and quantitative synthesis; writing and revision of the article.

Author 2 - Rodrigo Ramirez-Campillo - Statistical analysis, statistical report, writing and revision of the article.
Author 3 - José Afonso - Writing and revision of the article.
Author 4 - Hugo Sarmento - Data search; methodological assessment; writing and revision of the article.