Small-sided games: An umbrella review of systematic reviews and meta-analysis

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Review question / Objective: This umbrella review was conducted to summarize the evidence and qualify the methodological quality of the SR and SRMA published on small-sided games in team ball sports.

Condition being studied: Acute effects or adaptations promoted by small-sided games.

Main outcome(s): Identification of the effects (acute or adaptations), dimension of analysis (internal load, external load, technical, tactical, recovery/fatigue/readiness, psychological)

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 August 2020 and was last updated on 16 August 2020 (registration number INPLASY202080068).

INTRODUCTION

Review question / Objective: This umbrella review was conducted to summarize the evidence and qualify the methodological quality of the SR and SRMA published on small-sided games in team ball sports.

Rationale: The growing evidence about small-sided games led to a fast increase of systematic reviews (SR) and systematic reviews with meta-analysis (SRMA) about these games in the last decade. Now, an umbrella review may help to summarize the
main evidence about these drills, while providing an overview of the present and future research in this area.

**Condition being studied:** Acute effects or adaptations promoted by small-sided games.

**METHODS**

**Search strategy:** A systematic review of Web of Science, PubMed, Cochrane library, Scopus and SPORTDiscus databases was performed according to the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. The selection was for the systematic reviews and meta-analysis published prior to 15 August 2020, in English Language that containing relevant data about small-sided games in team ball sports.

**Participant or population:** Soccer players from any age group and sex.

**Intervention:** Small-sided games.

**Comparator:** Traditional running or control.

**Study designs to be included:** Systematic reviews and systematic reviews with meta-analysis.

**Eligibility criteria:** The a priori inclusion criteria for this umbrella review were as follows: (i) only SR or SRMA in SSGs in team ball sports; (ii) contained relevant data concerning SSGs in men and/or women team ball sports; and (iii) peer-reviewed SR and SRMA written in English that provided full-text. Studies were excluded on the basis that they: (i) were not SR or SRMA (e.g., narrative reviews, brief reviews, empirical articles, methodological proposals); (ii) were not fully written in English; and (iii) did not included relevant data in SSGs and/or team ball sports.

**Information sources:** A comprehensive computerized search of the following electronic databases was performed: (i) Web of Science (all databases); (ii) Scopus; (iii) SPORTDiscus; (iv) PubMed; and (v) Cochrane library (Cochrane Database of Systematic Reviews). The searching process for relevant publications had no restriction regarding year of publication and included SR and SRMA articles retrieved until 15th August 2020. The following search strings were employed: (“small-sided games” OR “sided-games” OR “drill-based games” OR “SSG” OR “conditioned games” OR “small-sided and conditioned games” OR “reduced games” OR “play formats”) AND (“team sport” OR football OR soccer OR futsal OR handball OR volleyball OR basketball OR hockey OR rugby OR cricket OR “water polo” OR lacrosse OR softball OR korfbal) AND (“systematic review” OR “meta-analysis”). Additionally, the reference lists of the studies retrieved were hand searched to identify potentially eligible studies not captured by the electronic searches. Finally, an external expert has been contacted in order to verify the final list of references included in this umbrella review in order to understand if there was any study that was not detected through our research.

**Main outcome(s):** Identification of the effects (acute or adaptations), dimension of analysis (internal load, external load, technical, tactical, recovery/fatigue/readiness, psychological).

**Quality assessment / Risk of bias analysis:** The Assessing the Methodological Quality of Systematic Reviews (AMSTAR-2) tool (Shea et al., 2017) was used to assess the methodological quality of the SR and SRMA included in this umbrella-review. The AMSTAR-2 it is a rating system that classify all reviews into critically low quality, low quality, moderate quality and high quality. The system classifies 16 items. The quality of each eligible SR and SRMA was analysed by two researchers (FMC and HS) independently. If the assessment was unclear, consensus was achieved with the help of a third author (JA).

**Strategy of data synthesis:** The following information was extracted from the included SR and SRMA: (i) number of original articles included (n), age-group (youth, adults or both), sex (men, women or...
both), competitive level (if available), design (SR or SRMA) and type of original articles included (experimental, observational analytic or both); (ii) identification of the effects (acute or adaptations), dimension of analysis (internal load, external load, technical, tactical, recovery/fatigue/readiness, psychological), outcomes explored, and main findings.

**Subgroup analysis:** No analysis.

**Sensibility analysis:** No analysis.

**Language:** English.

**Country(ies) involved:** Portugal.

**Keywords:** Drill-based games; performance; sports training; conditioned games; soccer; association football; basketball.

**Contributions of each author:**
Author 1 - Filipe Manuel Clemente - Head of the project; data search; qualitative synthesis; article written and revision.
Author 2 - José Afonso - Data search; qualitative synthesis; article written and revision.
Author 3 - Hugo Sarmento - Data search; methodological analysis; article written and revision.