

INPLASY202440006

doi: 10.37766/inplasy2024.4.0006

Received: 02 April 2024

Published: 02 April 2024

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ADMINISTRATIVE INFORMATION

Support - Personal.

Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202440006

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 02 April 2024 and was last updated on 15 July 2024.

INTRODUCTION

Review question / Objective This systematic literature review aims to explore the influence of SSG in comparison to various other training methods on CODS performance among young soccer players. To address this question, the following objectives have been established: (i) To identify and synthesize studies focused on enhancing CODS through small-sided games, (ii) to evaluate the efficacy of SSG interevention compared with other training methods on CODS, and (iii) to pinpoint existing gaps in the literature concerning the targeted subject.

Rationale Football requires both linear movements and movements involving preplanned or reactive changes of direction, resulting from reactions to situations created by opponents or teammates.

Preplanned movements may involve deceptive actions against opponents, often specific to the attacking phase, compared to change-of-direction movements as a reaction to various stimuli, which can occur in all four phases of the game. The ability to accelerate, change body direction, and rapidly decelerate could increase the chance of players to win one-on-one duels or perform effective defending maneuvers in the match (Sheppard & Young, 2006).

CODS is a rapid, preplanned change of direction or velocity that is intentional and planned (Parisi, 2022), pay attention to not being confudated with agility wich is by definition „a rapid whole-body movement with a change of speed or direction in response to a stimulus" (Sheppard & Young, 2006). Even if that CODS and agility are independent capacities and skills (Morral-Yepes et al., 2023), a large portion of the sports literature that claims to

discuss agility actually refers to pre-planned movements or CODS (Young et al., 2022).

SSG present a distinct football approach, resembling the 11 versus 11 format but involving fewer players on fields adapted to the player count or specific training goals. Regarded favorably, SSG are seen as a holistic method to concurrently enhance players' physical, technical, and tactical skills (Owen et al., 2012). Moreover, they are recommended for refining decision-making and player autonomy by offering diverse scenarios that demand prompt and effective choices (Davids et al., 2013), ultimately contributing to increased enjoyment during training sessions (Selmi et al., 2020).

To our knowledge, there are one systematic review and meta analyses (SRMA) compares SSG against running-based high-intensity interval training (HIIT) in soccer players, finding no significant differences between SSG and HIIT on CODS performance. However, within-group analysis revealed significant improvements in the HIIT group and no significant changes in the SSG group (F. M. Clemente et al., 2021a). Another SRMA on team sports, which included a very limited number of soccer studies, revealed that SSG compared with control groups (CON) had a large beneficial effect on CODS performance (Hammami et al., 2018).

Condition being studied To identify and synthesize studies focused on enhancing CODS through small-sided games.

METHODS

Search strategy Electronic databases, such as Web of Science (03.01.2024), PubMed (03.02.2024), and Scopus (04.04.2024), were systematically searched for relevant literature without applying an age range filter or other option for filter the results. The search strategy included the following keywords: (soccer OR football) AND (youth OR young OR child OR adolescent OR junior) AND (agility OR change of direction OR directional changes) AND (small-sided games).

Participant or population Youth soccer players, aged up to a maximum of 19 years old, regardless of gender, who are free from any injury.

Intervention SSG programs lasting a minimum of 4 weeks; inclusion of SSG combined with other programs is acceptable.

Comparator Presence of a passive or active control group.

Study designs to be included Randomized Trial.

Eligibility criteria Inclusion Criteria: (i) healthy male or female soccer players aged between 6 and 19 years; (ii) small-sided games programs lasting a minimum of 4 weeks; inclusion of small-sided games combined with other programs is acceptable; presence of a passive or active control group; (iii) availability of pre-post intervention values for change of direction and agility; (iv) randomized trials; (v) peer-reviewed original full-text articles written in English. Exclusion Criteria: (i) participants involved in sports other than soccer, those older than 19 years, or individuals with injuries or other medical conditions; (ii) Interventions other than small-sided games, or interventions lasting less than 4 weeks; (iii) absence of a passive or active control group; (iv) outcomes other than change of direction and agility; (v) non-randomized studies. Articles written in languages other than English, as well as reviews, conference abstracts, book chapters, and editorials.

Information sources Electronic databases Web of Science, PubMed and Scopus.

Main outcome(s) Change of direction speed

Quality assessment / Risk of bias analysis The methodological quality of the included studies was evaluated using the Physiotherapy Evidence Database (PEDro) scale (Maher et al., 2003), studies with scores of 6 or above are considered to be of high quality, while those scoring below 6 may have methodological limitations. Two independent reviewers, NI and MI, conducted quality assessments of the included studies. Any disagreements between the reviewers were resolved through a consensus meeting or, if necessary, by a third assessor, VP, providing a rating. Only studies with PEDro scores of 6 or higher were considered for the systematic review (Maher et al., 2003).

Strategy of data synthesis Characteristics of Included Studies and Outcomes Extracted:

Author and year of publication
Groups and number of participants
Mean age (years)
Level of play
Sex of participants
Study design
Significant differences at baseline
Tests used for assessment
Outcome measures extracted
Characteristics of SSG-Intervention Programs:
Combined intervention details
Duration of intervention (weeks)
Frequency of sessions per week

Total number of sessions
SSG formats used
SSG pitch dimensions (length × width)
Any other specific conditions or instructions
Sets and repetitions
Work duration
Duration of rest between repetitions
Type of recovery employed
Characteristics of Other Training Programs:
Summary of intervention details for programs other than SSG
Summary of Included Studies and Results of COD and Agility performance
Data extraction was conducted by the first author (NI), and the accuracy of the collected data was subsequently verified by two authors (MI and VP).

Subgroup analysis None.

Sensitivity analysis None.

Language restriction English.

Country(ies) involved Romania.

Keywords Small-Sided Games, Change of Direction Speed, Agility, Youth Soccer, Training Methods.

Contributions of each author

Author 1 - Ioan Neag - Lead the project, including conducting the data search, screening process, data extraction, and quality assessment. Also, responsible for writing and revising the original manuscript.

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Author 2 - Ion Mihăilă - Run the data search, screening process, data extraction, and quality assessment. Also, responsible for writing and revising the original manuscript.

Author 3 - Vladimir Potop - Run the data search, screening process, data extraction, and quality assessment. Also, responsible for writing and revising the original manuscript.

Author 4 - Ilie Mihai - Responsible for writing and revising the original manuscript.

Author 5 - Gabriel Trandafirescu - Responsible for writing and revising the original manuscript.