International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY PROTOCOL

To cite: Teixeira et al. The daily and accumulated training/ match load in football (soccer) players: a systematic review. Inplasy protocol 202080095. doi: 10.37766/inplasy2020.8.0095

Received: 22 August 2020

Published: 22 August 2020

Corresponding author:
José Eduardo Teixeira

zeteixeira1991@gmail.com

Author Affiliation:
Universidade de Trás-os-Montes e Alto Douro

Support: **CIDESD**

Review Stage at time of this submission: **Data analysis.**

Conflicts of interest:
The authors declare no conflict of interest.

The daily and accumulated training/ match load in football (soccer) players: a systematic review

Teixeira, JE[1]; Forte, P[2]; Araújo, ML[3]; Silva, AJ[4]; Barbosa, T[5]; Monteiro, AM[6].

Review question / Objective: **The purpose of this systematic review conducted in the topic of professional adult and youth football was three-folded: (1) analyse intra and inter-individual accumulative training load distribution within week (micro-cycle), weeks (mesocycle) and/or season phases; (2) analyse the intra and inter-individual accumulative training and match load distribution within week (micro-cycle), weeks (mesocycle) and/or season phases, and; (3) analyse relationships between internal and external load measures in the accumulative training load quantification.**
Condition being studied: **Training/match load in professional adult and youth football (soccer).**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 August 2020 and was last updated on 22 August 2020 (registration number INPLASY202080095).

INTRODUCTION

Review question / Objective: **The purpose of this systematic review conducted in the topic of professional adult and youth football was three-folded: (1) analyse intra and inter-individual accumulative training load distribution within week (micro-cycle), weeks (mesocycle) and/or season phases; (2) analyse the intra and inter-individual accumulative training and match load distribution within week (micro-cycle), weeks (mesocycle) and/or season phases, and; (3) analyse relationships between**

internal and external load measures in the accumulative training load quantification.

Rationale: Previous researches has focused on match load (Castagna et al., 2016) or quantify training load on specific training moments and highly controlled situations using constrained tasks (Engel et al., 2018; Hill-Haas et al., 2011). Monitoring gross and temporal demands during training sessions may be help to improve ecological validity and supply an accurate understanding about inclusion of training load measures in training practices.

Condition being studied: Training/match load in professional adult and youth football (soccer).

METHODS

Search strategy: The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines and the Population-Intervention-Comparators-Outcomes (PICOS) design were followed to conduct this systematic review (Elkins et al., 2010; Moher et al., 2009). The literature search was based on three databases: PubMed/Medline, Web of Science (WoS, including all Web of Science Core Collection: Citation Indexes), and Science Direct (SCOPUS).

Participant or population: Football (soccer) players.

Intervention: Quantify and compare external (physical) and internal (physiological) load during at least 1-week period.

Comparator: Periodization structure (micro-cycle, mesocycle and/or season phase).

Study designs to be included: Cohort studies or cross-sectional studies.

Eligibility criteria: The studies included in the present review followed these inclusion criteria: (1) training load monitoring studies with adult, youth and female football players; (2) studies with screening procedures based on internal and/or external load measures; (3) only studies that includes the training load quantification of gross and temporal demands in complete/full training sessions (with or without match-play load); (4) observational prospective cohort and/or cross sectorial design study including at least 1-week of monitoring; (5) studies with Sport Sciences as a research area and human physical and physiological performance as purpose; (6) original article published in a peer-review journal; (7) full text available in English; (8) article presented and description study sample and screening procedures (e.g. data collection, study design, instruments, and the measures).

Information sources: According to the search strategy were included studies from January 1980 to March 2020 for relevant scientific publications. Literature reviews, overviews, conference proceedings, and masters and Ph.D. thesis were excluded.

Main outcome(s): (1) analyse intra and inter-individual accumulative training load distribution within week (micro-cycle), weeks (mesocycle) and/or season phases; (2) analyse the intra and inter-individual accumulative training and match load distribution within week (micro-cycle), weeks (mesocycle) and/or season phases, and; (3) analyse relationships between internal and external load measures in the accumulative training load quantification.

Data management: The findings from the reviewed studies were organised into: weekly training load distribution analysis, weekly training and match load distribution analysis and relationships between weekly internal and external distribution. Characterization of participants is reported as mean ± standard deviation, confidence interval (IC) and effect size (ES) wherever possible. In order to clarify the variety of internal and external load measures used in the included studies, Table 2 resume thresholds used by the authors to calculate metric formulas. In addition, further reading it was provided to construct, measure and measurement extracted.

Quality assessment / Risk of bias analysis: The methodological quality was assessed using STROBE Statement by two authors. This checklist was used in previous reviews due their accuracy to reporting of observational studies and includes 22-item: title of the article and abstract interlinked (item 1), introduction (items 2 and 3), methods (items 4 to 12), results (items 13 to 17), discussion (items 18 to 21), and any other information (item 22). Those 18 items are common amongst study design and four items (Items 6, 12, 14, and 15) are specific. The study quality assessment was based on the attribution of one point for each checklist item (if the criteria were met). The sum of the total points counted was divided by the maximum possible (22 items). Each author performed the classification independently with subsequent inter-observer reliability analysis. The Kappa index test revealed a value of 0.93 (90% IC: 0.92-0.95).

Strategy of data synthesis: The data extractions from the included articles were performed according: (1) Summary measures describing construct, measure, measurement, thresholds and/or metric formula with included article reference and further reading; (2) Subject and study characteristics according publication date, study design, completive level and standard, sample (N), sex and anthropometric characteristics (stature and body mass); (3) Methodological approaches: observations sample (monitoring period, training sessions recorded, trainings/week, training mode and number of match-play), training load measures/metrics (internal and external load) and device specification (manufacturer model); (4) Main Findings: study purpose, periodization design, independent variables, findings, practical applications and future directions. Data reporting were extracted according study purpose, periodization structure, independent variable, findings and practical applications.

Subgroup analysis: None.

Sensibility analysis: None.

Language: English.

Country(ies) involved: Portugal.

Keywords: periodization; monitoring; training control; match demands.

Contributions of each author:
Author 1 - José Eduardo Teixeira.
Author 2 - Pedro Forte.
Author 3 - Miguel Leal Araújo.
Author 4 - António José Silva.
Author 5 - Tiago Barbosa.
Author 6 - António Miguel Monteiro.