INPLASY PROTOCOL

Corresponding author:
João Roquette

joao.roquette@estadio.ulisboa.pt

Author Affiliation:
Universidade de Lisboa

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The Development of Expertise and Performance in Sport: An Umbrella Review of Systematic Reviews and Meta-Analyses

Roquette, J[1]; Sarmento, H[2]; Araújo, D[3]; Güllich, A[4].

Review question / Objective: This paper synthesizes the findings of systematic reviews and meta-analyses already available about Expertise and Talent Identification and Development (TID) research in sport.
Condition being studied: The aim of this article was to perform a systematic review of the systematics reviews and meta-analyses published about the development of sport expertise, looking for a bird's eye view about the most frequently researched topics, calling for an updated accumulation of research to better understanding of the spread of summary effects, heterogeneity, hints of bias and quality of empirical findings.

INTRODUCTION

Review question / Objective: This paper synthesizes the findings of systematic reviews and meta-analyses already available about Expertise and Talent Identification and Development (TID) research in sport.

Rationale: The scientific study of sport expertise has grown significantly over recent years with important implications both for talent identification and development (TID) in sport. However, the literature is replete of inconsistencies, including the language and definitions used. Therefore, it has become critical to develop an umbrella review about the

scientific evidences with translation and truly impact for sport practices and programs on expertise and talent development.

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METHODS

Search strategy: A comprehensive computerized search of the following electronic database was performed: (i) Web of Science; (ii) Scopus and (iii) SPORTDiscus. The search for relevant publications had no year-of-publication restriction. It included SRs and SRMAs' articles until 2nd September 2024 on expertise and expert performance in sport, including talent identification and development. The following search strings were employed: ("Review" OR "Meta-analysis") AND ("Expert*" OR "Talent*" OR "Perform*" or "Gift*") AND ("Development" OR "Identification"). Additionally, the reference lists of the studies retrieved were manually searched, and relevant reviews and books were screened to identify other potentially relevant studies not captured by the electronic searches.

Participant or population: Athletes from various sports and multiple levels of sport expertise.

Intervention: Not applicable.

Comparator: Not applicable.

Study designs to be included: Various study designs (cross-sectional, retrospective, longitudinal,...)

Eligibility criteria: The publications included for this umbrella review met the following criteria: (1) were SR, including non-data-driven SR, or SRMA; (2) contained relevant data concerning expertise, predictors of performance, skill acquisition, and TID in sport; and (3) were written in the English language. Studies were excluded if they: (1) did not contain any relevant data about performance, expertise and talent, in sport domain; (2) examined mental health or athletes with mental or physical disabilities (3) focusing on injury prevention, predictors of injury, rehabilitation (including warm-up programs) and immunology of athletes; (4) interventions that only included training methods or programmes, feed-back and load-recovering monitoring, using unrepresentative tasks; (5) focusing in sport performance analysis centred in match analysis, and not in athlete-centred practice and performance; (6) were not SR (e.g. narrative, critical, brief or scoping reviews, and meta-analysis that are not founded in SR), (7) are conference abstracts or book chapters and (8) were written in a language other than English.

Information sources: The electronic databases Web of ScienceTM Core Collection, Scopus and SPORTDiscus were searched for relevant publications. We also scanned the reference lists of these publications in order to find other important articles for this overview review.

Main outcome(s): This umbrella review highlights the difficulties of TI in sport given the nonlinear nature of expertise and expert performance development and recognized important inconsistencies in the definition of some concepts used within sport expertise literature. Evidences detected in the reviewed studies about the importance of athlete-environment relationship, suggest that future research about the development of sport expertise need a multidimensional research. The results of empirical studies indicated that elite or expert athletes developed superior perceptual-cognitive skills which means a better perceptual performance. Moreover, studies examining developmental participation patterns of elite athletes revealed diversified engagement in different sports and non-organized sports

during childhood and adolescence with practical implications for long-term sustainable athletic development and expert performance.

Data management: To organise the results, the studies were classified into categories established according to the major research topics that emerged from the content analysis.

Quality assessment / Risk of bias analysis: The quality of selected studies each were assessed using the AMSTAR 2, a critical appraisal tool for systematic reviews that included randomized or non-randomized studies of health care interventions, or both.

Strategy of data synthesis: The most common themes of analysis were grouped into four (4) overarching categories: (1) Performance structure; (2) Talent identification (TI) in sport; (3) Talent development (TD) in sport and (4) Methodology, terminology and taxonomy.

Subgroup analysis: The four (4) main categories were subdivided into subcategories: (1) Performance structure; i) Task constraints; ii) Performer's constraints (2) Talent identification (TI) in sport; i) Coach assessment; ii) Test development for measuring talent predictors; iii) Relative age effect (3) Talent development (TD) in sport; i) Performance trajectories; ii) Task constraints; iii) Performers' s constraints; iv) Environmental constraints; and (3) Methodology, terminology and taxonomy.

Sensibility analysis: Not applicable.

Language: The selection was for the original articles in English.

Country(ies) involved: Portugal and Germany.

Keywords: sport expertise; sport performance; talent identification and development; practice; umbrella review.

Contributions of each author:
Author 1 - João Roquette.

Email: joao.roquette@estadio.ulisboa.pt
Author 2 - Hugo Sarmento.
Email: hugo.sarmento@uc.pt
Author 3 - Duarte Araújo.
Email: daraujo@fmh.ulisboa.pt
Author 4 - Arne Güllich.
Email: guellich@sowi.uni-kl.de