INPLASY

The disregard of external factors in football performance analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 26 January 2025 and was last updated on 26 January 2025.

INTRODUCTION

*R*eview question / Objective How have external factors (such as weather, location, and competition format) been considered in performance analysis in football?
The objective is to identify studies that analyze the influence of external factors on the performance of players and teams, such as stadium altitude, weather, travel, tournament format, etc.

Rationale There are many studies on football game analysis and performance. But did these studies consider aspects such as weather, game location or competition format? These are factors that affect team performance and should be considered in the analysis, as they may influence the outcome of the game.

Condition being studied Any study that discusses game analysis to verify whether external factors already mentioned were taken into consideration.

METHODS

Search strategy Electronic databases (Scopus, Medline (Pubmed), SPORTDiscus, Cochrane, Embase and Web of Science) were searched for relevant publications. Keywords and synonyms were entered in various combinations in all fields: (((((((((((((((("external factors") OR ("environmental factors")) OR ("contextual factors")) AND ("weather")) OR ("climate")) OR ("temperature")) OR ("humidity")) AND ("location")) OR ("home advantage")) OR ("travel distance")) OR ("altitude")) AND ("competition format")) OR ("tournament structure")) OR ("fixture congestion")) AND ("performance analysis")) OR ("match performance")) OR ("team performance")) OR ("game analysis")) AND ("soccer")) OR ("football")
Some articles from external sources, all related to the topic in question, were also added.

Participant or population Any football club who participated in any study who involves performance analysis.

Intervention Any game analysis to verify whether the mentioned external factors were taken into consideration.

Comparator Game analyses that have taken into consideration one or more of the mentioned external factors, and game analyses without any mentioned external factors.

Study designs to be included Comprehensive systematic review.

Eligibility criteria Inclusion criteria: (i): Any football club that participated in a study of game analysis; (ii): Studies of performance analysis in football; (iii): Studies that look at external factors like the weather, the temperature, the humidity, the location of the match, the home advantage, the travel distance, the fixture congestion or the altitude or the competition format in football.
Exclusion criteria: None exclusion criteria were considered because we wanted to see all studies that talk about match analysis in football and if they include the external factors mentioned before.

Information sources Electronic databases (Scopus, Medline (Pubmed), SPORTDiscus, Cochrane, Embase and Web of Science) were searched for relevant publications. Keywords and synonyms were entered in various combinations in all fields. Some articles from external sources, all related to the topic in question.

Main outcome(s) The main expected result is that few studies on game analysis have taken any mentioned external factor into consideration.

Additional outcome(s) The factor most expected to be taken into account is location, although it is still anticipated that it will not be mentioned in the majority of studies.

Quality assessment / Risk of bias analysis The quality of the evidence will be assessed using the GRADE (Grading of Recommendations Assessment, Development and Evaluation) scale, which considers the following criteria: risk of bias, inconsistency, imprecision, indirect evidence, and publication bias. Conclusions regarding the strength of recommendations will be based on the overall quality of the evidence and the clinical relevance of the outcomes.

Strategy of data synthesis Any study discussing game analysis in football will be considered to verify how many have taken the mentioned external factors into account, whether just one, several, or even none of the factors. Because all

those factors are relevant to the outcome of the game and needed to be evaluated.

Subgroup analysis Any football team that has participated in performance analysis studies.

Sensitivity analysis If we look at the actual stage of football we clearly see an increase of the number of analysts that work within the clubs. Also, there are more and more games every year. This has to be considered in the analysis of the game, because all of the details matter to win the game and the external factors can became an important part of it.

Language restriction English.

Country(ies) involved Portugal.

Keywords Match analysis, environmental influences and soccer analytics.

Contributions of each author
Author 1 - Tiago Fragoso - FMC lead the project, wrote and revised the original manuscript and RRC analyzed and interpreted the data, wrote the statistical report and revised the original manuscript.
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