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Physical performance differences between group and final stages in the 2022 FIFA World Cup

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INTRODUCTION:

Soccer is a sport characterized by a great number of high-intensity actions where players must display great sprinting abilities, leg muscular power, and technical skills in order to be successful. The aim of this study was to compare the physical performance of finalist teams in the 2022 FIFA World Cup Qatar, between group and final stages.

METHODS:

A total of forty matches (n=24 matches in the group stage and n=16 matches in the final stage) of the 2022 FIFA World Cup were analyzed. All data were accessed through the official FIFA website considering the official statistic report of each analyzed match. For group stage analysis only successful teams (teams cleared to the final stage) were considered. A total of eight physical metrics were considered: total distance covered, total distance in different intensity zones (zone 1: 0-7 km/h; zone 2: 7-15 km/h; zone 3: 15-20 km/h; zone 4: 20-25 km/h; zone 5: more than 25 km/h), number of high-speed runs (i.e., HSR – performed between 20-25 km/h) and number of sprints. All variables were normalized to game time.

A mixed-effects model was used to compare the variables behavior between the different World Cup stages. The significance level was set to $p < 0.05$ for all statistical analyses.

RESULTS:

Significant differences were found for all physical metrics analyzed between final and group stages ($p < 0.001$). In all variables teams cleared to the final stage presented higher levels of physical performance during group stage comparing to final stage ($p < 0,01$) meaning high total distance covered, distance covered in all intensity zones (zone 1, zone 2, zone 3, zone 4 and zone 5), and high number of sprints and high-speed runs, in group stage.

CONCLUSION:

Our finding suggest that teams perform differently along the championship. From the group stage to the final stage, mean team values decreased in all variables of performance, in distance covered and in high intensity actions. A possible reason to this decrease in performance is the cumulative fatigue, since the game calendar imposed a match at every 3 days, hampering a full recovery between matches. However, more information regarding the athlete perception of fatigue, objective measurements of fatigue and recovery are needed to support this suggestion. Another topic of interest is specific climatic characteristics of this particular world cup (Qatar), as it was a championship characterized by high temperature and humidity. Therefore, the knowledge about the physical behavior in different stages of FIFA World Cup Championships should be considered in the future.

Topic: Training and Testing

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