Challenges of Team-Sport Research

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The Football World Cup, the European Champions League, the AFL, the NBA, the Tri-Nations, the Six Nations, the NFL, the NHL . . . all of these competitions, well known by those who follow sports throughout the world, have one thing in common: They belong to the wide category of team sports. At least 8 sports in the summer Olympic Games fall within this category, and 1 more in the winter Olympics. The popularity of team sports among the general public is unquestionable. This popularity does not seem to be paralleled, however, among sports scientists, at least from a peer-reviewed publication perspective. In the first 6 issues of the International Journal of Sports Physiology and Performance, only 7 original investigations, 1 brief review, and 2 case studies were directly related to team sports. These numbers represent about 20% of the articles published in those submission types in IJSPP. It is likely that other sports-science journals publish even fewer studies on team sports.

A possible reason for the apparent paucity of team-sport research is that this type of research is quite difficult to conduct. The first difficulty that researchers face is that the physiological determinants of team-sport performance are not clearly understood in comparison with most individual sports involving different types of locomotion, such as running, swimming, cycling, or rowing, or various modes of jumping, throwing, and lifting. Identifying physiological qualities is a sine qua non among other attributes needed by athletes to be competitive in the team-sports arena.

Second, performance itself is a difficult concept to define in the world of team sports. What is performance in water polo, football, or basketball? Scoring more goals or points? Maintaining a higher playing tempo than the opposition for the duration of a match? Being able to execute skills and display qualities under the intense pressures of actual competition? Sport scientists are used to dealing with precise, quantifiable, numerical data, and although these can be indicators of an athlete’s potential to perform, actual performance within a team-sport framework is a relatively abstract concept.

The third major difficulty associated with team-sport research is quantification of training. This is a key aspect of high-quality sports-physiology research, particularly to assess the influence of training loads on physiological responses and adaptations and the relationships between these measures and performance capabilities. Team-sport training is generally characterized by a diverse range of training activities, often under quite variable environmental conditions. Scientists also need to consider the degree of interindividual variability in the responses and adaptations to training. All these issues complicate the integration of training variables into quantifiable units.
Another potential difficulty for team-sport research is the long competitive periods within and between national and international competitions. For instance, a player from any of the major European football clubs usually competes domestically (league and cup) and internationally (Champions League or UEFA cup) from mid-August to mid-May or June. Every other year club competition is immediately followed by national team competition—European or World Cup. This scheduling results in some elite-level players’ taking part in over 60 matches during the season. Under these conditions, it is not easy to carry out experimental research placing additional physical demands on already overloaded players. The relatively high risk of injury associated with many team sports is another factor making it difficult to carry out longitudinal investigations during the competition season.

From the editorial office of *IJSPP*, we encourage all sport scientists working closely with team sports to address the difficulties inherent in team-sport research and submit their research on this somewhat forgotten but extremely exciting area of sports physiology and performance.

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