Using Analytics to understand Performance and Wellness for a Women's College Soccer Team

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Abstract

This study used analytics to examine the effect of Home Field Advantage (HFA) on the Internal Load (Session Rate of Perceived Exertion (sRPE)), External Load (from GPS trackers) and wellness (based on surveys) for a Division III women's soccer team in Home and Away matches. First the home advantage (HFA) in the Southern California Intercollegiate Athletic Conference (SCIAC) that the team plays in was quantified using conference games only for all nine teams for three seasons. A multiple regression analysis was used to analyze the relationship between Goal Difference and sRPE, External Load variables and Wellness variables at the team, position, and athlete level based on 12 athletes. The results showed the league had an adjusted HFA of 57%. The analysis showed that Defenders were impacted more by away matches based on the medium effect sizes of the difference between their home and away measures for sRPE and sleep quality, and small effect sizes for Distance in high-speed zones and stress. One athlete, a forward, had different mean sRPE in home and away matches. These findings validated the existence of HFA in sports and the findings of differences in the impact of HFA to athletes in specific positions can be used as a guide in analyzing and acting on the performance and well-being of players at position level. The study demonstrated the value of analytics in gaining insights about players performance and well-being.

Keywords: Internal Load, Sports Analytics, Soccer, Home Field Advantage, Performance

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