Abstract

The aim of this dissertation was to evaluate and statistically compare the data of the distance of movement and player load (PL) with respect to the player specializations and with respect to the result of rallies. The analysis used the method of 3D kinematic motion analysis of a video recording of the official play-off match in the elite women's category. 3D reconstruction accuracy was calculated with a standard deviation of 0.0296 m (0.3%). A total of 14 players were evaluated (age = 25 ± 6 years; height = 182.3 ± 6.2 cm; weight = 72.1 ± 5.8 kg) in a total of 4 sets. 85% of all rallies lasted up to 12.4 s and 95% lasted up to 18 s. The average duration of the rally reached 7.76 ± 5.1 s. In the range of 0.7 m to 2 m was performed 91.8 ± 1.3 % of distance of movement over 0.7 m. In the range of 0 m to 0.7 m, the specialization spiker reached 60.5% of the total distance of movement. For blocker it was 59.8%, setter reached 54.1%, Opposite reached 62.1% and libero 57.9%. The highest ratio of movement was reached by the spiker for the forward direction (35.8%). The highest distance of movement was reached by the setter (1648 m). Players reached at 50 % speed value from 1.32 m/s in the backward direction for the blocker and setter, up to the maximum speed at 50 % for the setter with a value of 2.09 m/s and a blocker with 2.08 m/s. Descriptive statistics of a total of 997 distances evaluated that 85% of all games had a total PL up to 417.5 and 95% reached up to 654.1. The average value of PL was 252.2 ± 188.9 for the start. The analysis did not show sig. difference between the distances of movement of individual specializations ($p = 0.7151$). The analysis showed sig. difference between all PL intensities ($p < 2.2e-16$). The analysis showed sig. the difference between the total PL of the movement of individual specializations ($p = 0.004919$). The analysis showed sig. the difference between the 554 analysed total PL of players' movement in won or lost games ($t = 2.2774$, $df = 990.3$, $p = 0.02298$), but the result did show small effect size ($d = 0.12$). One of the most important findings of this work was that each of the posts reached 60% of the total distance of movement during the match in sections ranging from 0 to 0.7 m. A very important finding in this study was that the explosive game load (at accelerations above 3.5 m/s^2) accounted for up to 77.4% of the total PL. The limitations of this study were the limited sample size and the large, time-consuming data processing. For further load analysis and possible objectification, we recommend analysing a higher number of elite matches and players, analysing and comparing matches in terms of different genders, different levels of matches and different age categories.