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Performance profile in international male 3x3 Basketball, regarding live-stoppage time ratio and game time

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INTRODUCTION:
3x3 basketball is a novel sports discipline and merely a paucity of evidence on the physical demands is available. Only few studies deal with live- (LT) & stoppage-time (ST) and the ratio of these parameters, which could be useful for coaches to design appropriate and close-game training sessions [1]. Therefore, the aim of this study was to analyze LT and ST in relation to the dynamics of the game.
METHODS:
Fifteen international male 3x3 basketball games were analyzed using a video analyze system. For each game LT and ST were tagged and categorized into five phase (ph) durations: ph-I: 1-10s; ph-II: 11-20s; ph-III: 21-30s; ph-IV: 31-40s; ph-V: >40s. Time intervals (TI) were defined to subdivide the game: first 5min (t1), 5-10min (t2), last 3min (t3).
A repeated measures ANOVA was used to detect differences between the number and duration of LT and ST as well as effect size expressed as partial eta-squared (ηp^2). Significant main effects were followed-up by Bonferroni post-hoc procedures. Significance was set at $P<0.05$.
RESULTS:
Mean±SD of all actions and rest periods per game were 28±5 each. The total time ratio between LT and ST was 0.92±0.22.
Actions in ph-I accounted 42% of all actions (ph-II: 23%, ph-III: 15%, ph-IV: 9%, ph-V: 11%). Significant differences were found in the number of all actions between TI ($P\leq0.001$; ηp^2=0.748). Observed number of actions in t1 were 9±1, t2: 6±1 and t3: 3±1. Post-hoc test revealed differences between all TI with a significance of $P\leq0.004$.
Rest periods lasting for 11-20s accounted 53% of all breaks (ph-I: 11%, ph-III: 11%, ph-IV:10%, ph-V: 14%). The distribution of LT and ST for the entire game is also reflected in all TI (t1-t3). Significant differences were found regarding the number of rest periods in relation to the TI ($P\leq0.001$; ηp^2=0.690). The number of rest periods in t1 were 8±1, t2: 7±1 and t3: 4±1. Post-hoc test revealed differences between all TI with a significance of $P\leq0.038$.
Mean duration of LT was 20.0±3.7s and of ST 22.0±1.9s. Significant differences were only found in ST regarding to the TI ($P=0.023$; ηp^2=0.280). The duration of ST in t1 were 18.3±4.1s, t2: 30.9±15.0s, and t3: 24.8±7.3s.
Post-hoc test revealed differences between t1&t2 ($P=0.018$) and t1&t3 ($P=0.042$) with no differences between t2&t3. No significant differences were found regarding the duration of LT.
CONCLUSION:
T1 showed significantly higher numbers of actions and breaks compared to t2 and t3. Furthermore, rest duration was highest in t2, which could be caused by external influenced breaks (e.g.: TV time-out). Even if the total LT duration is 20.0s, almost half of the actions last for ≤10s only. In summary, results of this study suggest that game dynamic seems to change over the course of time. This should be considered for technical and tactical competition preparation by the coaching staff.

[1] Conte et al. (2019). Performance profile and game-related statistics of FIBA 3x3 Basketball World Cup 2017. Biology of sport.

Topic: Statistics and Analyses

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