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Acute effects of small-sided games combined with running drills on internal and external loads in young soccer players

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ABSTRACT: The purpose of this study was to compare the effects of regular small-sided games (SSGreg) and SSGs combined with running drills (SSGcom) on players' internal and external loads. Eighteen young male soccer players (average age: 18.2 ± 0.5 years) participated in 3 vs. 3 and 4 vs. 4 games, under both SSGreg and SSGcom conditions. SSGreg bouts were played for 4 minutes without additional running drills, while SSGcom bouts consisted of 3 min 30 s SSG and 15 s running before and after the bout, making the duration of each bout 4 minutes. During all SSGs, measurements of heart rate (HR) responses as well as distances covered in four different speed zones – walking (WLK), low-intensity (LIR), moderate-intensity (MIR) and high-intensity running (HIR) – were recorded. Technical characteristics were monitored during the SSGs, and the rating of perceived exertion (RPE) and blood lactate (La-) responses were determined at the end of each SSG condition. Compared to the SSGreg in both 3 vs. 3 and 4 vs. 4 formats, the SSGcom condition resulted in higher La- and RPE responses ($p < 0.05$), greater distance covered at MIR and HIR speeds and greater total distance ($p < 0.05$). The results of this study show that replacing 30 s within the 4-min bouts of SSGs (both 3- and 4-a-side) by 2 x 15 s of running drills is effective in increasing internal (La- and RPE) and external loads (MIR and HIR) without a significant decrease in total passes and successful passes in young soccer players.

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INTRODUCTION

Coaches are constantly looking for new training methods for athletes to achieve better physical performance [1]. In this context, it is necessary for coaches to accurately determine how internal (heart rate, blood lactate or rating of perceived exertion) and external (distances covered in different speed zones) loads are induced by training [2]. Nowadays, due to advances in technology, coaches can easily track internal and external loads of athletes' with GPS tracking and heart rate monitoring, which are essential indicators especially in soccer endurance training [3].

Traditionally, coaches use running training to improve players' aerobic endurance performance. For example, high intensity aerobic interval running consisting of 4 bouts of 4 min at 90–95% HR_{max} has been reported to increase aerobic endurance performance in soccer players [4]. Even though it is easy to control internal and external loads in this kind of running training [5], this type of training is less preferred during the season because it does not involve match-specific movements such as acceleration, deceleration, change of direction, decision-making under pressure, and players found it less enjoyable [6]. For this reason, soccer coaches might prefer using game-based training instead of running-based training for the development of aerobic endurance performance.

Small-sided games (SSGs) are the most commonly used game-based training method for the development of players' aerobic endurance performance [7]. SSGs are modified games that are played in smaller areas with modified rules and contain fewer players than official soccer games [1]. SSGs meet the demands of soccer matches as well as allowing players to improve tactical and technical skills in match-specific conditions; they therefore provide an effective way of increasing training efficiency [3, 8]. However, SSG studies have shown that many variables should be taken into account by coaches in order to achieve appropriate exercise intensity; these include the pitch size, the number of players, the number of bouts, coach encouragement, the training regimen, alterations of rules and the use of goalkeepers [9–12]. In addition, previous studies have shown that SSGs, especially in 3 vs. 3 and 4 vs. 4 player formats, can induce internal loads comparable to running-based aerobic interval training [5, 11–13]. However, these studies also found that SSG has higher between-player variation in terms of internal loads. This might negatively affect the planning and execution of periodization of individualized training load.

An additional advantage of SSGs over interval training shown by analysis of time-motion characteristics is that players perform more acceleration and deceleration actions in SSGs compared to normal match conditions [14, 15]. However, players cover less distance in high intensity running zones during SSGs as compared with running-based interval training and matches [14, 16]. To our knowledge, no study has explored how the distances covered in high intensity running zones during SSGs could be increased. It is believed that if a certain amount of time during a SSG bout is replaced by running drills, the distance covered by the players in high intensity running zones might increase and consequently achieve the demands of regular soccer matches. Therefore, our study aimed to compare the internal and external loads in 3 vs. 3 and 4 vs. 4 SSGs under two different conditions with the same bout duration: regular SSGs (SSGreg) and SSGs combined with running drills (SSGcom). It was hypothesized that SSGcom training would increase both internal and external loads compared to SSGreg.

MATERIALS AND METHODS

Participants

Eighteen young male soccer players (age: 18.2 ± 0.5 years; body mass: 68.1 ± 4.9 kg; height: 174.8 ± 6.6 cm; maximum heart rate (HR_{max}): 199.4 ± 3.3 beat·min^{-1}; distance covered in the Yo-Yo intermittent recovery test level 1: 1854.3 ± 240.8 m; soccer training experience: 9.4 ± 1.0 years) voluntarily participated in this study. All players were members of the same youth team competing in an elite academy league in Turkey. The players train five session days per week for 1.5 hours per session and play an official match at the weekend. All players and parents were notified regarding the research procedures, requirements, benefits, and risks and written informed consent was obtained prior to the study. The study was approved by the Pamukkale University Ethics Committee and was conducted in a manner consistent with the institutional ethical requirements for human experimentation in accordance with the Declaration of Helsinki.

Experimental Design

This is a within-subject repeated measures study conducted during a competitive season. During the 2 weeks before the experiment the players were familiarized with testing procedures and both types of SSG. The week before the SSGs, anthropometric measurements (height, and body mass) were taken for each player; this was followed by administering the Yo-Yo intermittent recovery test level 1 (YYIRT) to measure player's HR_{max}. A ranking system including YYIRT scores and technical/tactical skills of the players was used to balance among the SSG teams as previously reported [12, 17].

All SSG experiments were completed within two weeks. Only 1 of these 4 SSG formats was performed in each session by the players, and the SSG sessions were randomized as to whether SSGreg or SSGcom conditions applied. SSGs were played in order of 3 vs. 3 SSGs, then 4 vs. 4 SSGs; SSGs had an interval of at least two days between them. The SSGs were played after a 20 min standardized warm-up, which consisted of low intensity running, striding and stretching. The YYIRT and SSGs were performed on an artificial grass pitch at a similar time of the day in order to have similar chronobiological characteristics [18]. They were also conducted under the same environmental conditions (a clear view of an 'open' sky; dry condition, 21–23°C and 23–28% humidity).

The Yo-Yo Intermittent Recovery Test

The YYIRT (level one) consists of repeated 20 m runs back and forth between the starting, turning, and finishing lines, and at a progressively increasing speed, which is controlled by audio bleeps from a tape recorder. The tape (YO-YO tests, HO + Strom, Denmark) was calibrated before every trial, and procedures were identical to those previously described by Bangsbo et al. [19]. The highest HR measurement during the test was recorded as HR_{max}. The YYIRT (level one) has been validated for HR_{max} determination [20].

Small-Sided Games (SSGs)

All SSGs were performed in 4 bouts, each bout lasting for 4 minutes, with 2 minutes of passive recovery between bouts. The pitch dimensions used were 20 x 30 m (width x length, area per player: 100 m^2) for the 3-a-side SSGs and 25 x 32 m (width x length, area per player: 100 m^2) for the 4-a-side SSGs. The 3 vs. 3 and 4 vs. 4 SSGs were played under two different conditions, regular SSG (SSGreg) and SSG combined with running drills (SSGcom). Thus, each player participated in four different SSG sessions on four different days. Each bout of SSGreg was played for 4 minutes without an additional running drill. In contrast, each bout of SSGcom was sequenced as 15 s running, 3 min 30 s SSG, and then 15 s running. Thus, players completed a total of eight running drills in each SSGcom session. Players started each bout with 80 m running for 15 s (7.5 s to reach the right sideline and 7.5s to return to the sideline of the SSG area) with the coach giving a verbal signal to start the run. Then, 5 s after the completion of the 3 min 30 s SSG, players were requested to wait at the starting line in order to complete the 15 s running drill for 80 m together for a second time, at which point the SSG bout was considered completed. The players were asked to organize their speeds by reminding them every 5 s during the additional running. To minimize interruption when the ball left the field of play, spare balls were kept all around the pitch and four supporting players were stationed around the outside of the playing area ready to return the ball to play when necessary. Moreover, the coaches continually offered verbal encouragement to the players during the SSGs. Players were allowed to consume available drinking water during recovery periods between the SSG bouts. The SSGs were played without a goalkeeper to achieve higher internal and external loads [10].

Heart Rate Measurement

Each player's heart rate was recorded at five-second intervals during the SSGs and YYIRT by heart rate monitors (Polar Team Sport System, Polar Electro Oy, Finland). Stored data were transferred to a computer and filtered by dedicated software (Polar Team 2 Software, Finland). Exercise intensities during SSGs were assessed using HR and were compared to HR_{max} as measured in the YYIRT test. The mean HR for the SSGs was calculated as the average value of the four bouts excluding recovery periods between the bouts. The HR data were expressed as percentage HR_{max}.

Blood Sampling

Capillary blood lactate samples (5 μl) were taken 3 min after the end of the last bout of each SSG in line with Taoutaou et al. [21]. The blood samples were taken from the players' ear lobes and were immediately analysed using portable analysers (Lactate Plus, Nova Biomedical, Massachusetts, USA) which had been previously calibrated and validated [22].

Rating of Perceived Exertion (RPE)

The CR-10 Rating of Perceived Exertion scale proposed by Foster et al. [23] was presented by investigators to each player individually immediately after the last bout of each SSG. All players were informed about and familiarized with the CR-10 scale before the SSGs. This scale has been validated as an indicator of internal training load in studies of SSGs [24].

Time-Motion Characteristics

Players' external loads during the SSGs were measured using portable global positioning system (GPS) units at a 5 Hz sampling rate, and were then interpolated three times per second between sampling points to take the positional sampling rate to 15 Hz (SPI ProX; GPSports, Canberra, Australia). Total distance and distances in different speed zones were then calculated using dedicated software (Team AMS, GPSports, Canberra, Australia). The GPS unit was placed into a harness that positioned the device between each player's shoulder blades; every player wore them during the SSG. The GPS units were turned on 15 min before the start of each SSG session and turned off immediately after the SSG session had ended. SPI ProX GPS units have been previously determined to be accurate and reliable for measures of movement in team sports [25]. The data were analysed according to 4 speed zones which were defined in line with previous studies: walking (WLK, 0–7.1 $km \cdot h^{-1}$), low-intensity running (LIR, 7.2–14.3 $km \cdot h^{-1}$), moderate-intensity running (MIR, 14.4–19.7 $km \cdot h^{-1}$) and high-intensity running (HIR, > 19.8 $km \cdot h^{-1}$) [26]. Data analysis was performed by creating splits for each bout in each session. Passive rest intervals were therefore excluded.

Technical Actions

All SSGs were filmed using two fixed digital video cameras (Sony Handycam DCR-SR72, Japan) positioned 3 m from the corners of the playing area and recordings were used to determine the technical activity of players. The mean number of technical actions performed during each bout was evaluated by a hand notation system as previously employed by Owen et al. [27]. The number of touches of the ball, total passes, successful passes, tackles, and turnovers were monitored with the help of video recording; this involved playing the recordings several times until the analysis was completed. The frequency of technical action was analysed by 2 observers experienced in match analysis. Great importance was placed on the reliability of this procedure. The principal investigator therefore checked the accuracy of the analysis by reviewing and re-analysing one designated SSG session.

The number of exact agreements observed between the two analyses provided the level of agreement for the evaluation of technical activities within SSGreg and SSGcom during 3 vs. 3 and 4 vs. 4 formats according to Drust et al. [28]. Observation-by-observation breakdown of the result was obtained for each data analysis to allow for statistical calculations. This method was then supplemented by the calculation of kappa corresponding to the number of agreements. The resulting reliability values were 87% ($\kappa = 0.87$) for total passes, 88% ($\kappa = 0.88$) for total touches of the ball, 86% ($\kappa = 0.86$) for successful passes, 82% ($\kappa = 0.82$) for turnovers and 83% ($\kappa = 0.83$) for tackles. The results showed "almost perfect" agreement, according to Landis and Koch [29].

Statistical Analysis

The data are presented as means and standard deviations. Before using parametric tests, the assumption of normality was verified using the Shapiro-Wilk test. A paired t-test was performed on each dependent variable (HR, $\%HR_{max}$, La-, RPE, time-motion characteristics and technical actions) to compare differences between SSGreg and SSGcom for 3 vs. 3 and 4 vs. 4 formats. The level of statistical significance was set at $p < 0.05$. Effect sizes (ES-Cohen's *d*) were also calculated to determine practical differences between 3 vs. 3 and 4 vs. 4 formats under the two training conditions. ES values of 0.20–0.49, 0.50–0.79, and 0.8 and above were considered to represent small, medium, and large differences, respectively [30]. The 95% confidence interval (95%CI) was calculated for the difference between mean values for each of the variables. Inter-individual variability of $\%HR_{max}$, La-, RPE, time-motion characteristics, and technical actions between the SSGreg and SSGcom training conditions were quantified using the coefficient of variation (CV).

RESULTS

Table 1 shows the players' average HR, $\%HR_{max}$, La- and RPE responses to SSGreg and SSGcom conditions for 3 vs 3 and 4 vs 4 formats. In terms of La-, SSGcom showed significantly higher La- responses than SSGreg both in 3 vs. 3 (t = -6.49; large effect: 1.53) and 4 vs. 4 (t = -4.40; large effect: 1.03) formats. RPE responses to SSGcom were also significantly higher than SSGreg in 3 vs. 3 (t = -10.80; large effect: 2.55) and 4 vs. 4 (t = -8.76; large effect: 2.07) formats.

Table 1 also shows maximum speed reached, average distance covered in the four speed zones, WLK, LIR, MIR, HIR, and total distances covered by the players under SSGreg and SSGcom conditions. Compared with SSGreg, players in SSGcom: (a) covered significantly lower distances in LIR in 4 vs. 4 games (t = 4.55; large effect: 1.07); (b) covered significantly greater distances in MIR in both 3 vs. 3 (t = -6.01; large effect: 1.42) and 4 vs. 4 (t = -3.31; medium effect: 0.78) formats; (c) covered significantly greater distances in HIR during both 3 vs. 3 (t = -22.13; large effect: 5.22) and 4 vs. 4 (t = -26.88; large effect: 6.33) formats; (d) covered significantly greater total distances in both 3 vs. 3 (t = -11.47; large effect: 2.70) and 4 vs. 4 (t = -10.58; large effect: 2.49) formats; and (e) reached significantly higher maximum speed in both 3 vs. 3 (t = --8.985; large effect: 3.05) and 4 vs. 4 (t = --6.023; medium effect: 2.176) formats.

Table 2 indicates the number of the touches of the ball, total passes, successful passes, tackles and turnover of the players for both conditions and formats. As we can see, there were significant differences between SSGreg and SSGcom in terms of touches of the ball, tackles and turnovers. Compared with SSGcom, players in SSGreg: (a) had significantly more touches of the ball during 3 vs. 3 (t = 3.21; medium effect: 0.76) and 4 vs. 4 games (t = 2.58; medium effect: 0.61) but (b) made significantly fewer tackles (t = 2.37; medium effect: 0.56) and turnovers (t = 3.63; large effect: 0.86) during 3 vs. 3 formats.

TABLE 1. Comparison of internal and external loads between SSGreg and SSGcom

		Variables	SSGreg		SSGcom			
			Mean ± SD	**CV (%)**	**Mean ± SD**	**CV (%)**	**95% CI of difference in means (SSGreg – SSGcom)**	**ES (*d*)**
Internal Loads	3-a-side	HR	176.3 ± 6.8	3.8	177.2 ± 6.0	3.4	-3.11 to 1.36	0.14
		$\%HR_{max}$	88.4 ± 2.8	3.2	88.9 ± 2.5	2.8	-1.57 to 0.69	0.19
		La- ($mmol \cdot L^{-1}$)	7.0 ± 2.8	40.2	9.6 ± 1.9*	19.3	-3.40 to -1.73	1.53
		RPE (CR-10)	5.1 ± 1.5	29.2	7.4 ± 1.3*	18.1	-2.72 to -1.83	2.55
	4-a-side	HR	174.3 ± 6.6	3.8	173.1 ± 8.3	4,8	-2.41 to 4.86	0.16
		$\%HR_{max}$	87.4 ± 2.6	3.0	86.8 ± 4.0	4.6	-1.57 to 0.69	0.16
		La- ($mmol \cdot L^{-1}$)	6.4 ± 1.5	23.5	8.2 ± 1.7*	21.4	-2.55 to -0.89	1.03
		RPE (CR-10)	4.2 ± 1.0	23.6	6.3 ± 1.4*	23.1	-2.61 to -1.60	2.07
External Loads	3-a-side	WLK (m)	656.6 ± 64.6	9.8	634.0 ± 86.5	13.6	-20.81 to 66.09	0.26
		LIR (m)	1071.5 ± 143.9	13.4	1000.0 ± 161.8	16.2	-8.33 to 151.35	0.45
		MIR (m)	229.0 ± 86.5	37.8	346.0 ± 56.6*	16.4	-158.06 to -75.93	1.42
		HIR (m)	21.6 ± 16.7	77.6	369.3 ± 73.0*	19.8	-380.89 to -314.57	5.22
		Total distances (m)	1978.6 ± 126.2	6.4	2349.2 ± 130.3*	5.5	-438.78 to -302.39	2.70
		Maximum Speed ($km \cdot h^{-1}$)	21.0 ± 2.3	10.9	26.5 ± 1.1*	4.2	-6.81 to -4.22	3.05
	4-a-side	WLK (m)	647.6 ± 60.3	9.3	665.2 ± 85.5	12.8	-54.69 to 19.36	0.24
		LIR (m)	1090.3 ± 128.9	11.8	972.5 ± 111.9*	11.5	63.08 to 172.36	1.07
		MIR (m)	220.4 ± 75.8	34.4	282.7 ± 71.4*	25.3	-102.10 to -22.60	0.78
		HIR (m)	15.8 ± 13.5	85.6	382.0 ± 58.5*	15.3	-394.96 to -337.46	6.33
		Total distances (m)	1974.0 ± 133.3	6.8	2302.5 ± 108.2*	4.7	-394.04 to -262.98	2.49
		Maximum Speed ($km \cdot h^{-1}$)	22.5 ± 2.1	9.3	26.3 ± 1.3*	4.9	-5.04 to -2.42	2.176

Note: HR: heart rate; %HRmax: percentage of maximum heart rate; La-: blood lactate; RPE: rating of perceived exertion; SSGcom: small-sided game with combined running drill; SSGreg: small-sided game without running drill; WLK: total distances at 0–7.1 $km \cdot h^{-1}$ (m); LIR: total distances at 7.2–14.3 $km \cdot h^{-1}$ (m): MIR: total distances at 14.4–19.7 $km \cdot h^{-1}$ (m): HIR: total distances at > 19.8 $km \cdot h^{-1}$ (m); CV: coefficient of variation; 95% CI: 95% confidence interval; ES: effect size *(absolute value)*; * Significant difference from SSGreg, $p < 0.05$

DISCUSSION

This study aimed to compare both internal and external loads from small-sided games played under two conditions, SSGreg and SSGcom. The most significant findings of the study were that higher La- and RPE responses were revealed in SSGcom than SSGreg, and greater distances were covered in MIR and HIR zones and total distance in SSGcom.

The mean $\%HR_{max}$ value of SSGs was in the range 86–89% in the current study. These $\%HR_{max}$ values were in line with previous studies [13, 31, 32]. Therefore, both SSGreg and SSGcom training formats could be used to improve soccer-specific aerobic endurance of young soccer players. The present study results also revealed no significant differences between SSGreg and SSGcom in terms of HR and $\%HR_{max}$ for 3 vs. 3 and 4 vs. 4 formats. On the other hand, SSGcom induced significantly higher La- and RPE responses compared to SSGreg ($p < 0.05$, large effects). The reason for this result may be that while in the running drills added to the beginning and end of each bout of the SSGcom all players performed standard high-intensity activities, the lower responses to SSGreg conditions may be due to the structure of the game, which may result in different movement profiles for players. These findings showed that the additional running drills during the SSGs led to higher internal loads (except for HR and % HR_{max}).

The most important difference between the SSGreg and SSGcom formats in this study was the external loads rather than the internal loads. The present study results showed that in SSGcom players covered significantly greater distances in MIR and HIR speed zones and significantly greater total distance compared to the SSGreg in both 3 vs. 3 and 4 vs. 4 games. In agreement with previous studies' results [33, 34], this study also showed that players in 3 vs. 3 and 4 vs. 4 SSGreg covered very low distances in the HIR zone (21.6 m and 15.8 m, respectively). Moreover, Lupo et al. [35] and Arslan et al. [36] reported that the training approach including the running-based training programme could be more effective in improving soccer players' sprint performances and speed-based conditioning than that of the soccer-specific drills. In terms of external loads, the length of the SSG playing field could have restricted players from reaching high running speeds during SSG. The length of the playing field is 30 m in 3 vs. 3 games and 32 m in 4 vs. 4 games. These distances are thought to be too short for the players to reach high speeds and to remain at these speeds for a prolonged period. In addition, players reach higher maximum speeds on SSGcom compared to SSGreg. This finding suggests that the field dimensions are insufficient to reach high speeds in SSGreg. These findings showed that the additional running drills during the SSGs led to higher external loads.

Technical analysis also showed that 3 vs. 3 and 4 vs. 4 SSGcom led players to have fewer touches of the ball compared to SSGreg. This difference could be explained by the fact that the SSG was played 30 s less in each bout of SSGcom than SSGreg (3 min 30 s vs. 4 min) and also caused by the higher physical fatigue level in SSGreg as compared to SSGcom. Also, the decrease in the number of touches of the ball seems to lead to a corresponding reduction in the number of tackles and turnovers in 3 vs. 3 SSGcom, but this is not the case for 4 vs. 4 games. On the other hand, there were no significant differences between SSGcom and SSGreg in terms of total passes and successful passes for 3 vs. 3 and 4 vs.

TABLE 2. Comparison of technical actions between SSGreg and SSGcom

		Variables	SSGreg Mean ± SD	SSGreg CV (%)	SSGcom Mean ± SD	SSGcom CV (%)	95% CI of difference in means (SSGreg – SSGcom)	ES (*d*)
Technical Actions	3-a-side	Touches of the ball	120.2 ± 25.0	20.8	99.2 ± 25.1*	25.3	7.19 to 34.8	0.76
		Total passes	47.6 ± 10.3	21.6	41.3 ± 12.8	31.0	-1.58 to 14.25	0.40
		Successful passes	38.3 ± 10.2	26.6	33.4 ± 13.5	40.4	-2.85 to 12.63	0.31
		Tackles	6.5 ± 3.2	49.2	4.7 ± 2.3*	48.9	0.20 to 3.46	0.56
		Turnover	11.8 ± 2.7	22.9	9.4 ± 1.7 *	18.1	1.02 to 3.86	0.86
	4-a-side	Touches of the ball	87.7 ± 27.0	30.8	76.2 ± 19.7*	25.9	2.09 to 20.79	0.61
		Total passes	35.9 ± 7.6	21.2	33.7 ± 6.4	19.0	-1.25 to 5.70	0.32
		Successful passes	29.0 ± 7.9	27.2	27.1 ± 6.2	22.9	-1.53 to 5.30	0.27
		Tackles	4.1 ± 2.2	53.7	4.6 ± 2.3	50.0	-2.04 to 0.93	0.19
		Turnover	8.0 ± 2.4	30.0	7.8 ± 3.1	39.7	-1.77 to 2.22	0.06

Note: SSGcom: small-sided game with combined running drill; SSGreg: small-sided game without running drill; CV: coefficient of variation; 95% CI: 95% confidence interval; ES: effect size *(absolute value)*; * Significant difference from SSGreg, $p < 0.05$

4 formats. Parallel to our findings, Fanchini et al. [37] reported that total passes and successful passes during the SSG were not influenced by bout duration.

It is important to outline the limitations of the present study. One of these was the small sample size, but this was an unavoidable drawback, given the high-level nature of the players. Another potential limitation of this study is that the running speed during the 15 s running drills was not individualized to players' personal maximum aerobic speeds (MAS). In this study, all players without exception were able to cover 80 m in the 15 s running drills. In future studies, however, it may be advisable for coaches and sports scientists to determine the individual maximum aerobic speeds (MAS) of the players and then they can determine their individual distances according to the MAS (such as 100%, 110% or 120% of MAS).

CONCLUSIONS

In conclusion, the results of this study show that in terms of external loads, players covered greater distances in higher speed zones during SSGcom compared with SSGreg. This provides empirical evidence to coaches and sports scientists who want to prescribe appropriate internal loads for aerobic endurance development and encourage players to cover greater distances in the higher speed zones. In the light of this, an effective adaptation to SSG training, to add running drills before and/or after bouts, is recommended. Alternatively, coaches may prefer to add 30 s running drills only at the end of the bouts. This situation may help the external load to remain constant while increasing the internal load; also, the number of technical actions may increase because players begin each SSG bout fresher.

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