MONITORING OF THE PRESEASON SOCCER PERIOD IN NON-PROFESSIONAL PLAYERS

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Abstract:

This study aimed to monitor the training load and to evaluate the fluctuations of straight and change of direction sprinting during a 5-week of the preseason period in 17 non-professional soccer players. Straight 10-m sprint and 15-m zigzag sprint tests were applied six times: at the beginning and on each Friday. Monitoring of the internal training load has been achieved by the Edwards' TL and the session-RPE, while the external training load was measured by the GPS system. A general prevalence of low-intensity activities within training units and friendly matches were observed, with an increase in high-intensity activities during the last two weeks of the preseason. The performance of both sprint tests decreased during the first three weeks, becoming better at the end of the period, relative to a higher training load scheduled at the beginning of the preseason. Fluctuations in training load emerged along the five weeks with a continuous decrement from the first to the third week, while during the fourth and fifth week a moderate increase was achieved. Moreover, a very large correlation (r=0.71; p<.001) was evident between the Edwards' TL and the session-RPE, highlighting the usefulness of an easy and valid method to monitor the internal training load. In conclusion, combining the monitoring of training load and the administration of field tests lead to a better distribution of workload, done by the coaching staff, thus avoiding excessive athletes' overstressing.

Key words: *field tests, change of direction, RPE, GPS, heart rate, training load*

Introduction

Soccer performance is characterized by a successful integration of physical, technical, tactical, and emotional aspects (Bangsbo, 2003). All these components need to be developed in the overall annual training program, which requires a specific time course of adaptation in relation to different phases of the soccer season. Training periodization through the season could be arranged following classical or undulating non-linear models, also considering the preseason and in-season periods, respectively (Francioni, et al., 2016; Gamble, 2006). Preseason periodization can be differently managed based on the specificities of a certain competitive level. For instance, approach to the start of a new season can be different between professional and non-professional settings, with the players of the lower level usually having a greater reduction of training during the off-season, which may determine a marked decreasing of their fitness level at the entry of the preseason (Reilly & Williams, 2003; Ross & Leveritt, 2001). For this reason, in a non-professional setting, coaches could receive helpful feedback from an extensive use of field tests, to manage training programs and avoid potential detrimental effects. In particular, the players' ability to repeatedly perform intense intermittent exercise over a prolonged period of time, linear accelerations, and rapid changes of speed and direction might be assessed by both intermittent and recovery YO-YO, straight sprints, and agility tests, respectively (Little & Williams, 2005; Sayers, Sayers, & Binkley, 2008).

Generally, players' fitness level during the preseason have been evaluated considering only two testing sessions: at the beginning and at the end of the period. Previous investigations demonstrated improvement in aerobic and anaerobic power, strength, speed, and agility at the end of the preseason period in professional and semiprofessional soccer players (Caldwell & Peters, 2009; Mercer, Gleeson, & Mitchell, 1997). However, an approach based on only two testing sessions does not take into account weekly fluctuations of performances, which may influence the course of the planned training. For this reason, Tessitore et al. (2011) demonstrated the feasibility of a multiple testing sessions approach with a weekly test administration in semiprofessional soccer players. However, there is a lack of evidence regarding this approach for the investigation of straight and change of direction sprinting in non-professional players.

When training-induced adaptation is debated, both external and internal training load (TL) need to be considered. External training load (ETL) refers to the amount of work done by the athletes (i.e., distance run, number of sprints, time in interval training, weight lifted, number of jumps, etc.) and its monitoring is nowadays achievable by the use of GPS technology (Aughey, 2011). GPS provides a wide range of parameters, even though there is still a lack of consensus for the best variable describing TL and the analysis of longitudinal data from an entire squad (Akenhead & Nassis, 2016). Internal training load (ITL) refers to the physiological response associated with the ETL, therefore its monitoring is essential to verify whether each player receives adequate training stimuli. Heart rate (HR) and Rating of Perceived Exertion (RPE) are commonly used to quantify exercise intensity. In particular, Banister's TRIMP, Edwards' TL, and Lucia's TRIMP (Banister, 2003; Edwards, 1993; Lucia, Hoyos, Santalla, Earnest, & Chicharro, 2003) are HR-based methods developed to estimate the intensity of training. However, despite the large use of these approaches, the time-consuming process of collecting and analyzing such data, the required technical expertise, and the cost of HR monitoring devices still limit their use by the non-professional soccer teams (Impellizzeri, Rampinini, Coutts, Sassi, & Marcora, 2004). Conversely, the session-RPE based method, proposed by Foster et al. (1995), allows representation of ITL magnitude in a single number. It has been successfully verified in different soccer contexts (Coutts, Rampinini, Marcora, Castagna, & Impellizzeri, 2009; Impellizzeri, et al., 2004; Kelly, Strudwick, Atkinson, Drust, & Gregson, 2016; Scott, Lockie, Knight, Clark, & Janse de Jonge, 2013). However, no studies have investigated the HR and RPE responses, and their relationship, during an entire preseason period in non-professional players.

Considering this lack of information regarding the non-professional soccer setting, there is a need to propose simple, non-invasive, applicable, and inexpensive approaches, which are accurate and feasible, to monitor TL and fitness performance. Therefore, the purpose of this study was to provide a broad picture of the fluctuations of performance in non-professional soccer players through the administration of sprint tests and monitoring of TL during the entire preseason period.

Methods

Design

This study was designed to assess performance's fluctuations of non-professional soccer players during a preseason period of five weeks through the administration of two sprint tests and monitoring of ITL and ETL. Data were collected during all 20 training units (TUs) and four friendly matches (FMs) of this period. Both sprint tests were administered six times: on the first day of preseason (T0), to assess the players' initial fitness level, and on each Friday of all five weeks (T1-T5) in order to assess weekly performance fluctuations. To assess the ITL both the Edwards' TL (Edwards, 1993) and session-RPE (Foster, et al., 1995) methods were utilized. ETL was determined by the GPS system devices. Temperature (24.3±3°C) and humidity (50±5%) were monitored during all experimental sessions to prevent any potential influence of theirs on the performance.

The experimental design of this study did not interfere with the preseason training planned by the coaching staff. Thus, no changes of planning throughout the five weeks were required.

Subjects

The Institutional Review Board approved the study which was performed in accordance with the ethical standards in the sport and exercise science research. The team's roster included 22 non-professional male soccer players (age: 19-35 years), who provided a written informed consent form before the commencement of the study. Only subjects who completed all the experimental sessions and had no injuries during the entire preseason period were selected for statistical analysis. Hence, the final sample comprised 17 subjects. Demographic data of the subjects are presented in Table 1. All subjects had at least 12 years of soccer experience and, due to their non-professional status, declared the absence

Table 1. Demographic data of the participants (mean±SD)

	Age (years)	Body height (cm)	Body mass (kg)	BMI ($kg \cdot m^{-2}$)	HR_{max} (bpm)	YYIET (m)
All (17)	24.9±4.3	179±5	73.3±8	23.0±2.1	189±7	3385±702
Defenders (8)	23.6±4.1	178±4	73.9±7.1	23.3±1.3	193±7	3405±528
Midfielders (6)	27.3±4.5	178±5	69.7±5.5	22.1±2.8	186±4	3673±790
Attackers (3)	23.3±3.5	182±6	79.0±13.2	23.8±2.4	187±8	2440±170

of soccer-specific physical activity during the off-season (12 weeks).

Procedures

Preseason

The preseason comprised five weekly microcycles with a different schedule: 1) week 1: seven TUs and two testing sessions (T0 and T1); 2) week 2: four TUs, two FMs, and one testing session (T2); 3) week 3: two TUs, two FMs, and one testing session (T3); 4) week 4: four TUs and one testing session (T4); 5) week 5: three TUs and one testing session (T5).

All TUs were composed of a warm-up (with general and/or specific focus), physical conditioning and technical-tactical workouts, with a duration from 90 to 120 minutes and scheduled always at the same hour in the afternoon (6:00 p.m.). Moreover, a detailed training diary was filled out to identify the structure of each training unit (i.e., characteristics and duration of each work- and rest-period).

Sprint tests

A 10-m straight sprint test was used to assess performance of linear acceleration (10SS), while a 15-m sprint test, with two 60° changes of direction (15COD), was selected to evaluate performance of planned agility (Condello, et al., 2013). The latter test involves rapid coupling of acceleration and deceleration phases, with a low degree of the COD angle and a short duration (Young, James, & Montgomery, 2002). It provides a valid and specific evaluation of soccer movement patterns related to the game (Condello, Kernozek, Tessitore, & Foster, 2016). In both tests players started from a standing position with their preferred foot forward and their front toe behind the start line, and then produced maximal effort going over the stop line. In the 15COD players had to sprint for 15m performing two 60° COD (one to the right- and one to the left- side) around a 1.25m pole (Condello, et al., 2013). Sprinting time was measured by means of a dual infrared reflex photoelectric cell system (Polifemo, Microgate, Bolzano, Italy), to the nearest of 0.01s. The participants were allowed two trials with a 3-minute recovery period between them, with the best score used for analysis. All testing sessions took place at the same time of the day (6:00 p.m.) and were preceded by a 15-minute standardized warm-up, involving general running, shuffling, and multi-directional movements. Furthermore, sprint tests took place on the same artificial turf, with the players wearing their soccer shoes.

Aerobic fitness

The Yo-Yo Intermittent Endurance Test (YYIET) level 1 was administered the second day of the preseason to assess the players' aerobic fitness. According to the procedures proposed by Bangsbo (1996), the YYIET consisted of incremental shuttle running until exhaustion. Every second 20m, players had five seconds of active recovery consisting of 2 x 2.5m jogging. When a participant failed to reach the finishing line in time twice, the test was interrupted, and the following parameters were identified: time, distance covered, step and repetitions, and HR_{max}. Individual HR_{max} values were used to analyze HR responses registered during all TUs and FMs. The tests took place on the same artificial turf, with the players wearing soccer shoes.

ETL monitoring

Among the 17 players who fulfilled all the requirements of this study, only eight (three defenders, three midfielders, and two attackers), previously judged by the coaching staff as potential starters of the new season (Kraemer, et al., 2004), were additionally monitored by means of GPS devices (SPI Pro X, 15 Hz, GPSports, Australia). The weakly ETL monitored by GPS was expressed as the percentage of the total time spent in and percentage of total distance covered while being in each of the following six speed categories identified in a previous study by Bradley et al. (2010): standing (ST; 0-0.6 $km \cdot h^{-1}$), walking (W; 0.7-7.1 $km \cdot h^{-1}$), jogging (J; 7.2-14.3 $km \cdot h^{-1}$), running (R; 14.4-19.7 $km \cdot h^{-1}$), high-speed running (HSR; 19.8-25.1 $km \cdot h^{-1}$), and sprinting (SP; ≥25.2 $km \cdot h^{-1}$). According to this procedure, standing, walking, and jogging were classified as low-intensity activities, while running, high-speed running, and sprinting were considered as high-intensity activities. Moreover, the percentage of total time spent in these six speed categories was analyzed for five groups of technical-tactical drills performed during TUs (i.e., small-side games [SSG], situational drills [SI], tactical drills [TA], training matches with modified rules [TMR], and training matches [TM]) and for FMs. Finally, FMs were also investigated in terms of differences between the first and second half.

ITL monitoring

Heart rate-based method. The individual HR responses of players were recorded every second using HR transmitter belts (Polar Team2 Pro, Polar, Kempele, Finland). After each experimental session, the individual HR data were downloaded onto a portable computer using the specific software (Polar Team2 Software, Kempele, Finland) and subsequently imported into Excel (Microsoft Corporation, Redmond, WA, USA). Then, according to the procedures of the Edwards' HR-based method (Edwards, 1993), the ITL was estimated by measuring the product of the accumulated training duration (minutes) of five classes of intensity of efforts (50-60%, 60-70%, 70-80%, 80-90%, and 90-100% of HR_{max}) by a coefficient relative to each class (from 1 to 5), and then summating the results. The weekly

ITL was expressed considering the mean (±SD) of each individual's Edwards' TL of all the training units of every week.

Session-RPE based method. Players were asked to provide a Rating of Perceived Exertion (RPE) 30 minutes after the end of each TU and FM, using the Italian translation of the Borg CR10-scale (Borg, et al., 1987). According to the procedures of Foster et al. (1995), the session-RPE was calculated by multiplying the exercise duration (minutes) by the RPE value. Hence, the weekly ITL was expressed considering the mean (±SD) of each individual's session-RPE of all the training units of the week.

The relationship between the session-RPE and Edwards' TL was investigated considering the mean team session-RPE and HR-based method for each experimental session.

Statistical analyses

Data related to sprint tests (10SS and 15COD) were presented as means±SD. A univariate analysis of variance (ANOVA) for repeated measures was conducted to investigate the differences between the six testing sessions (T0-T5) for 10SS and 15COD administered during the five weeks and to explore the difference between the five weeks for individual session-RPE and Edwards' TL. Bonferroni correction was used for *post-hoc* analysis.

Descriptive statistics were used to describe the weekly ETL in relation to the percentage of total time spent and the percentage of total distance covered in each of the six speed categories. Moreover, descriptive statistics were used for the percentage of total time spent in the six speed categories during technical-tactical drills (SSG, SI, TA, TMR, and TM).

A multivariate analysis of variance (MANOVA) for repeated measures was applied to the analysis of the percentage of total time spent in each of the six speed categories during friendly matches in order to evaluate the differences between the first and second halves.

The relationship between the mean team session-RPE and Edwards' TL for all 24 experimental sessions was calculated using Pearson's correlation coefficient (r).

A level of confidence of 0.05 was used throughout the study and the statistical analyses were carried out using SPSS for Windows software (version 23.0).

Results

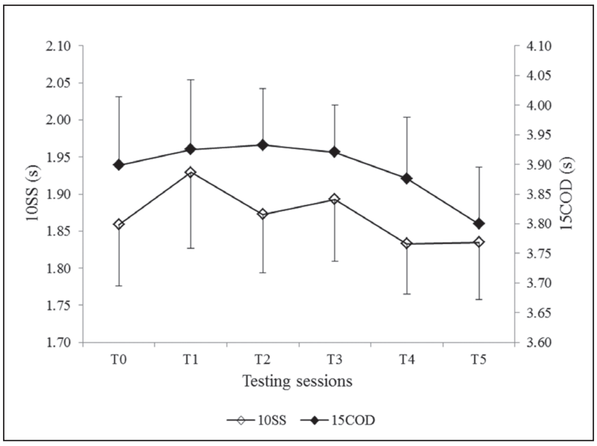
During the five preseason weeks, the team spent a total amount of 1,822 minutes in motor activity, of which 1,394 minutes in TUs, 338 minutes in FMs, and 90 minutes in pre-match warm-up. The time spent in motor activities during training units comprised: a) 28.6% of warm-up (both with and without the ball); b) 24.2% of physical conditioning (42.6% strength, 25.4% aerobic, 18.3% agility, and 13.6% anaerobic training); c) 47.2% of technical-tactical activities (54.6% training matches [TM], 17.8% training matches with modified rules [TMR], 15.4% tactical drills [TA], 7.8% small-sided-games [SSG], and 4.4% situational drills [SI]).

The significant difference was found for both sprint tests ($p<.05$). The *post-hoc* analysis revealed the differences between T1-T4 ($p=.02$) and T3-T4 ($p=.025$) for the 10SS, and between T0-T5 ($p=.014$), T2-T5 ($p=.04$), and T3-T5 ($p=.041$) for the 15COD sprint (Figure 1).

The monitoring of ETL highlighted a weekly greater amount of time spent and distance covered for W and J, compared to that for R, HSR and SP (Table 2).

Comparing the ETL for the technical-tactical exercises (Figure 2), data confirmed that HSR and SP accounted for less than 1% in all type of drills, while ST was markedly greater in situational drills (28.6±8.5%) compared to all the others (ranging from 2.5% to 10.2%). Moreover, J was markedly lower (10.1±4.5%) during situational drills compared to the higher values attained in all the other types of exercise (ranging from 23.3% to 29.5%). Finally, R was always under 5% in all types of exercise (ranging from 2.5% to 4%). The distribution of ETL during the friendly matches replicates the distribution for the training matches.

The analysis of friendly matches showed that players spent an average of 3.4±1.8%, 65.8±8.0%, 25.0±6.8%, 4.7±2.1%, 0.9±0.5%, and 0.1±0.1% of time per match in ST, W, J, R, HSR, and SP, respectively. MANOVA indicated a main effect for the halves ($p=.018$), with the differences being observed for ST (1st half: 2.5±1%; 2nd half: 4.8±1.8%; $p=.003$), W (1st half: 64.3±8.4%; 2nd half: 68±7.2%; $p=.029$),



Note. * Significantly different from T1 (p=.020) and T3 (p=.025). # Significantly different from T0 (p=.014), T2 (p=.04), and T3 (p=.041).

Figure 1. Mean±SD of the 10-m straight sprint (10SS) and 15-m sprint with changes of direction (15COD) test during the six testing sessions.

Table 2 Percentage of total time spent in the six speed categories and total distance covered (mean±SD)

Categories	Parameters	Week 1	Week 2	Week 3	Week 4	Week 5
Standing	Time (s)	20.1±17.4	12.6±14.4	11.0±12.0	19.8±16.9	18.5±15.5
	Distance (m)	0.9±1.0	0.6±0.8	0.4±0.4	0.8±1.1	0.6±0.7
Walking	Time (s)	56.0±10.7	59.8±13.2	63.9±9.4	53.6±13.0	56.1±10.1
	Distance (m)	49.6±16.3	49.2±17.5	51.0±11.2	45.5±15.5	47.2±14.6
Jogging	Time (s)	19.2±12.6	21.1±10.8	21.4±9.4	20.3±12.6	20.9±12.9
	Distance (m)	36.0±16.1	35.0±12.1	37.6±12.1	35.7±15.3	36.7±16.1
Running	Time (s)	4.2±7.2	4.6±6.1	3.1±2.2	4.6±5.6	3.2±2.1
	Distance (m)	11.1±12.5	10.9±12.0	8.7±4.7	12.0±9.6	9.6±5.5
HSR	Time (s)	0.5±0.8	1.7±3.7	0.5±0.6	1.3±1.9	1.1±2.1
	Distance (m)	2.1±4.2	3.9±7.6	2.0±2.3	5.0±5.1	4.6±8.4
Sprinting	Time (s)	0.1±0.2	0.1±0.6	0.0±0.1	0.2±0.3	0.3±1.1
	Distance (m)	0.4±1.3	0.4±1.6	0.2±0.5	0.9±2.1	1.4±5.0

Note. HSR=high speed running

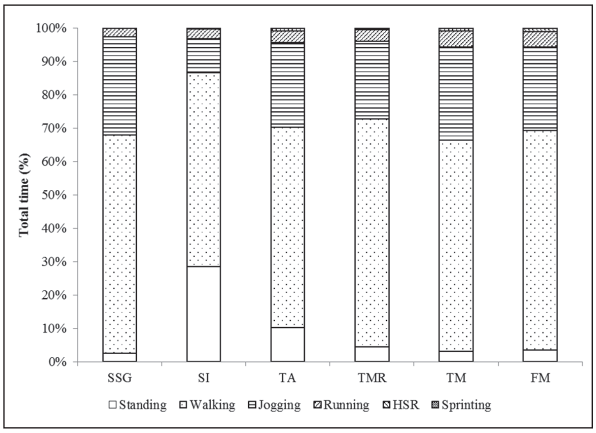


Figure 2. Percentage of total time spent in the six speed categories for the five technical-tactical exercises (small-side-games [SSG], situational drills [SI], tactical drills [TA], training matches with adopted rules [TMR], training matches [TM]) and friendly matches (FM).

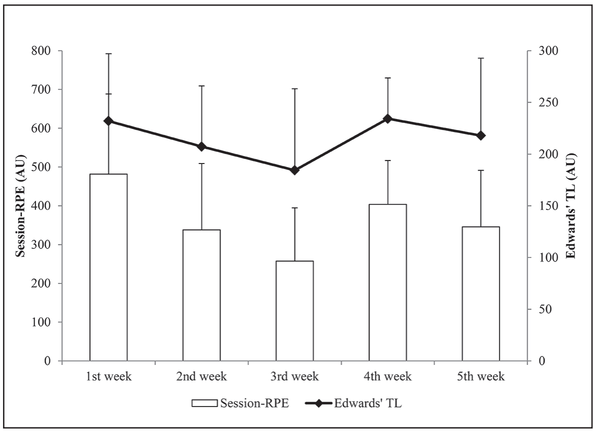


Figure 3. Weekly team session-RPE and Edwards' TL (mean±SD).

J (1st half: 26.9±6.9%; 2nd half: 22.2±5.8%; p=.038), and R (1st half: 5.2±2.3%; 2nd half: 4.1±1.7%; p=.028).

The data of monitoring ITL are presented in Figure 3 with the analysis of the weekly Edwards' TL and the session-RPE showing a similar trend between the two methods. As a consequence, a very large correlation (r=.71; p<.001) was obtained between the mean team session-RPE and Edwards' TL. Furthermore, regarding session-RPE, the differences were evident for week 1 compared to week 2 (p=.004), week 3 (p<.001), and week 5 (p=.003), for week 2 compared to week 4 (p=.04), and for week 3 compared to week 4 (p<.001) and 5 (p=.011). Regarding Edwards' TL, the differences emerged for week 1 compared to week 3 (p=.006), for week 2 compared to week 4 (p=.041), and for week 3 compared to week 4 (p=.024) and 5 (p=.039).

Discussion and conclusions

The present study aimed to assess fluctuations in physical performance of non-professional soccer players during a preseason period of five weeks, through the administration of sprint tests and monitoring of ITL and ETL. The main findings of this study showed: a) an effect of the TL on the fluctuations of the players' sprinting performances throughout the weeks; b) a general prevalence of low intensity activities within the training units and friendly matches; c) the significant relationship between team session-RPE and Edwards' TL.

The need of the coaching staff to correctly assess the preseason's planned workouts requires the use of specific field tests also at a non-professional level. Adopting the multiple testing sessions approach (Tessitore, et al., 2011) rather than the dual (pre- and post-preseason) testing sessions approach (Caldwell & Peters, 2009; Mercer, 1997) allows a deep understanding of the weekly fluctuations of fitness performance. Therefore, in this study the weekly variation of the players' ability to perform linear accelerations and rapid changes of direction have been evaluated during the entire preseason period.

Regarding the 10SS test, the players revealed a general alternation of performance (worsening and improvements) for subsequent test along the five weeks (T1-T5) compared to T0. However, a slight difference of performance (Δ) between the first (T0) and the last (T5) of the six testing sessions was evident (Δ: 0.02±0.09 s). In contrast, a different weekly trend for the 15COD test was observed. In fact, after T0 the ability to perform rapid CODs showed a worsening trend till T3 followed by an improvement during the weeks 4 (T4) and 5 (T5), demonstrating a higher difference T0/T5 (Δ: 0.10±0.10 s) compared to that observed for the 10SS. It might be speculated that the greater performance improvement registered for the sprint with COD could be explained by the complexity of this motor task. Indeed, COD ability requires a certain level of strength and speed qualities as well as coordinative and technical qualities. All these components were continuously trained during the entire preseason; however, while for strength and agility (42.6% and 18.3%, respectively, of the total time of training) the coaching staff reserved a focus during the central part of the training units, the coordinative and technical aspects were mainly developed during the warm-up parts. Consequently, it could have been expected that there would be a greater improvement in performance of the test with the COD task. For linear acceleration, which is a relatively simple motor task, it could be more difficult to obtain a greater improvement in a short period of time. However, the results from the sprint tests highlighted a real effect of the TLs across the weeks. This actual trend was evident for the first three weeks, during which a higher number of training units was scheduled compared to the last two weeks. Then, the reduced number of weekly training units and the rise of the players' fitness level observed during the last two weeks could explain the general improvement of performance registered for the sprint tests.

The monitoring of ETL throughout the five weeks revealed a progressive increase in the amount of both time spent and distance covered by high-speed running and sprinting during the last two weeks (4^{th} and 5^{th}). This trend could also explain the results of the sprint tests. In fact, the worsening observed for the sprint tests during the first three weeks was also confirmed by the lower values of high-speed running and sprinting, emphasizing the players' reduced capability to perform motor activities at high-intensity levels at the beginning of preseason. Conversely, the increased values for high-speed running and sprinting observed at the end of the period, which were related to the rise of players' fitness level, could explain the improvement of performance in sprint tests.

The analysis of ETL in relation to the different forms of training revealed some differences during the technical-tactical part of the TUs based on the different types of drills performed, although a general prevalence of low intensity activities was clearly apparent. Situational drills (i.e., 1-1, 2-1, and 3-2) showed the highest values for standing and the lowest values for walking and jogging. This trend can be partially explained by the exercise setting, in which players had to wait their turn to play an offensive/defensive action. Conversely, small-side-games, being played on a reduced pitch dimension and number of players (i.e., 4-4 or 5-5), showed the lowest percentage of standing and the highest percentage of jogging, due to the necessity for the players to continuously move in order to receive and pass the ball from/to the teammates. However, when the ETLs of the different training activities were compared to those of friendly matches, the training match, that is a match played 11-11 on a full-sized field under regular game rules (but of a shorter duration), is the training activity that most replicate the friendly matches' demands due to the similar distribution of percentage of time spent in the six speed categories. Furthermore, the lack of high-intensity activities performed during the technical-tactical exercises could be explained by both the competitive level of the team and the fact that, generally, the non-professional players are used to start the preseason after a long off-season period during which they did not practice any specific training.

The analysis of ETLs of the four friendly matches confirmed that players spent less time in the execution of high-intensity activities. Similarly, the analysis of the two game halves underlined greater percentages of standing and walking and lower percentages of jogging, running, and high-speed running during the second half. The reduction of play-intensity that generally occurred during the second half (due to fatigue) has been previously observed also in professional soccer players (Mohr, Krustrup, & Bangsbo, 2003; Torreño, et al., 2016).

Finally, this study was an attempt to quantify the ITL by means of the session-RPE-based method (Foster, et al., 1995) and the Edwards' TL method (Edwards, 1993). Both methods showed a similar trend with fluctuations during the five weeks, highlighting that during the preseason period the TL fluctuates greatly across the training sessions, reflecting the periodization strategy of the team (Scott, et al., 2013). However, the relationship between these two methods is in accordance with that found in young (Impellizzeri, et al., 2004), semiprofessional (Casamichana, et al., 2013), and professional (Kelly, et al., 2016; Scott, et al., 2013) soccer players, highlighting usefulness of the session-RPE as a simple and global method to monitor the ITL. This is particularly relevant at non-professional levels where the availability of sophisticated monitoring systems is lacking.

The results of this study demonstrated the importance of having an adequate preseason plan, particularly in a non-professional context. Indeed, the players' fitness level could be negatively affected by a longer off-season (compared to that of professional players), which is often characterized by a partial physical inactivity as regards soccer. Consequently, the administration of correctly balanced 'work' and 'rest' becomes fundamental at the beginning of the soccer season. The proposal of the preseason training plan in this study showed a clear influence on performances of short linear acceleration and COD ability. Particularly during the first two weeks, scheduling more days of rest would be advisable in order to gradually move from the off- to the in-season period. Hence, monitoring of training and the evaluation of fitness performance proposed in this study suggest a strategy to help the coaching staffs in the distribution of the TLs. Although monitoring the ETL is less feasible at the competitive level of our study, due to the high cost of GPS systems, the monitoring of ITL can be easily operable using session-RPE. Similarly, the evaluation of sport-related performance can be achieved through a very frequent use of easy and quick tests. In that regard, the sprint tests proposed in this study seem to meet these requirements, particularly because they are related to game-specific demands (Condello, et al., 2016).

In conclusion, the combination of the monitoring of ITL and the administration of field tests could address for a better planning and distribution of the workloads tailored for each player, avoiding excessive athletes' overstressing, during the preseason period, as well as the competitive season, also at the non-professional level.

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