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SOCCER TRAINING METHODOLOGY: A COACH'S VISION

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Abstract

Background. Based on the fundamental principles of training, the methodology that each coach develops in the planning of sessions can be effective in improving the performance of their athletes.

Study purpose. Therefore, the general objective pursued in this study was to find out the type of work carried out by the coaching staffs in their different teams/clubs.

Materials and methods. For this work, a descriptive cross-sectional study was carried out on a sample of 517 coaches from different divisions and nationalities. To characterise the sample, descriptive measures were used and Pearson's chi-square was used to study whether there is a relationship between the variables studied. All statistical analyses were performed with Stata and statistical significance was always set at a p-value < 0.05.

Results. The results indicated that the methodology preferred by the coaches for working on the technique was the Coerver and analytical methods. The global and analytical methods were the most used on average by the coaches for tactical work. The coaches, regardless of the division or category in which they train, indicated that strength is the most important capacity to work on.

Conclusions. The results of this study can be very useful for future coaching staffs when distributing training sessions and workloads.

Keywords: football, methodology, training, coaches, coaching staff.

Introduction

In recent years there has been a substantial growth in research related to football specific training methods with a strong emphasis on the effects of small-sided games (SSG). The increase in research on this topic coincides with the rise in popularity gained by football-specific conditioning, which involves training players to cope with football match situations. Available studies indicate that physiological responses, tactical and technical skill requirements can be modified during SSGs by altering factors such as the number of players, field size, game rules and coach encouragement (Aguiar et al., 2012). Football is a situational sport, subject to many variables such as field, opponent, teammates, presence of the ball and other factors. However, the aspects that significantly affect training in this sport are: conditional, psychological and technical-tactical aspects (Gaetano & Rago, 2014). In the same way, football coaches also value their autonomy, self-efficacy and the fact that training sessions are varied and demanding as positive aspects for their professional satisfaction (Sanmiguel-Rodríguez, 2021a).

Traditional periodisation models in football have some characteristics such as the individualisation of the training load and the response of the training load based on biological laws. Therefore, most of these models aim for the athlete to reach a peak of fitness at a certain time (Martín, 2022). However, in a sport such as football, peaks of fitness have to be constant during the course of the season. Tactical Periodisation is a training methodology, originally

developed for football that focuses primarily on the Pattern of Play that a team intends to use in competition. It has been popularised by successful European coaches and has subsequently been proposed as a model for other sports (Martin, 2022). Branquinho, Ferraz and Marques (2020) indicated that training load has become relevant for coaches in recent years. The correct choice of training method can help coaches to increase the performance of their teams and achieve the proposed training objectives (Branquinho, Ferraz & Marques, 2020).

Based on the fundamental principles of coaching, an effective working methodology has to be used to improve performance in each of the sport specialities (Poveda & Poveda, 2006). Each sport has a model of competition and a dynamic of actions and efforts that mean that training has to be diverse in its approach. In football, not only must energy metabolisms and the required motor capacities be trained, but it must also be done with methods that ensure a good transfer to each competition match (Poveda &Poveda, 2006). Thus, the evolution of training and teaching methods has been a frequent topic of research in sport science for many years, reaching all sport modalities, including football (Barrero, 2023). Likewise, the modelling of sport training in football must consider principles such as specialisation and sport specificity, as the different functions of the game show notable modifications in the application of physical stimuli; therefore, certain indicators for training must be taken into account (Morocho, 2022). There are substantial differences between one type of training methodology and another, mainly due to the way of planning and imparting the contents, the tasks and the control of its effectiveness by the coaches. Morejón Rodríguez and Martín Agüero (2019) pointed out the advantages of the Structured Constitutive Alloy training as a type of training that is coupled to the characteristics of the General Identity Game Model, to the preparation for competition, as well as to the game system with its respective model and tactical drawings; also adjusting to the individual characteristics of the footballers, their position and function within the system and the game model.

To talk about physical fitness training is to talk about the human being's ability to adapt. For decades, football has developed different schemes, means and methodologies in the sports training cycle, with the sole purpose of obtaining better results. In the origins of football before the 1900s, the game was based on actions in which strength and endurance predominated, the objective was to mark the opponent by means of any action or basis of the game, regardless of the technique of execution (Perlaza & Chávez, 2014). Over the years, football began to take on new perspectives, from periodisation to the preparation of the different aspects of sports training, based on physical preparation. Nowadays, football has become more strategic, physical and tactical, the classic game no longer predominates, on the contrary, we now see a more stylised, faster football, typical of the evolution that occurs year after year (Perlaza & Chávez, 2014). Physical, technical and tactical preparation becomes essential when planning the sports training cycle, and this is what leads to sporting success in football teams. When talking about tactical periodisation and its role in football planning in competition, it is important to know that the coaching staff is the only one who decides and applies its training and control system (Perlaza & Chávez, 2014). For its part, the teaching of ball control technique in football generates great impact in the sporting sphere, provoking in the players the necessary stimulus to learn the technical gesture, encouraging athletes to prepare themselves to reach the elite and participate at international level in the major world leagues (Lasso Morales et al., 2023).

The sport initiation processes are fundamental for children to learn the basics necessary to practice sport. In the different training categories in football, various teaching methods are applied, with the analytical method being the most accepted; the planning of exercises similar to competition and focused on tactics suffer alterations (Motato Rodríguez & Quilindo, 2021). Pre-sports games are considered essential resources when practising a sport, and football in particular, as they help in the development of areas such as motor, cognitive and social, i.e. they offer a comprehensive training in the human being, in addition, they allow the development of skills and necessary abilities (Vargas-Cuenca & Avila-Mediavilla, 2022). The most relevant findings are characterised by demonstrating the lack of knowledge of the methodology of pre-sports games and the lack of application in training. It is concluded that, within the football academies, coaches do not include this methodology in their daily planning for football practice (Vargas-Cuenca & Ávila-Mediavilla, 2022). The training methodology in training football should not be based on applying the same methodology as in adult football by reducing its volume, intensity and complexity. It is about applying another methodology according to the biological age within each stage (Ruiz, 2004). Sports training with young people should transmit educational values by developing mechanisms for personal improvement and respect for opponents in a favourable environment for all the agents involved (Pinheiro et al., 2014).

On the other hand, top-level competitive sport, in the pursuit of sporting success, has among its main objectives the victory and the improvement of results. Sport sciences maintain a continuous effort in relation to the application of new methodologies and training systems to improve and maintain the performance of athletes. Team sports require methodologies adapted to their idiosyncrasies (Pons et al., 2020). The detection of sporting success constantly drives coaches, performance analysts and researchers to evaluate and promote new methodologies to improve performance. Technique has often been the subject of debate about the real methodological approach to adopt in adolescence (Pietro & Filomena, 2019). However, knowing the reality and the events that occur in professional competitions allows coaches to propose different training programmes, as well as to change the game model as needed, adapting to the competitive reality (Fernández-Cortés et al., 2020). The complexity of the physical demands of football requires the implementation of a multi-component training programme. The development, planning and implementation of such a programme is difficult due in part to practical constraints related to the competitive calendar. Therefore, effective planning and organisation of training is crucial to the effective delivery of the training stimulus for both individual players and the team (Morgans et al., 2014).

Therefore, the overall objective pursued in this study was to understand the type of work that coaching staffs carry out in their different teams/clubs.

Materials and methods

Study participants

For this study, a descriptive cross-sectional study was carried out on a sample of 517 coaches (men n = 500; women n= 17) from different divisions and levels with an average age of more than 37 years (M = 37.16 ± 9.925), an average professional experience of more than 10 years (M = 10.08 ± 7.857).

To calculate the sample size, the database of federated licences issued in Spain by the Royal Spanish Football Federation in the year 2022 (Ministry of Culture and Sport, 2023) was used, registering a total of 1,137,651, which, establishing a margin of error of 5% and a confidence interval of 95%, requires a minimum sample size of 385 subjects. The calculation of sample size for survey research is key to ensuring conclusive results.

For the analysis of the results, the sample was divided into categories according to the division in which they were training, being first division/national team (n = 7), second division (n = 4), third division (n = 17), preferential (n = 64), regional (n = 77), base (n = 333) and no team (n = 15).

Study organization

The instrument used was an ad hoc questionnaire to collect information on the distribution of training sessions (number of sessions, time dedicated to basic skills, technique, tactics, methodological aspects of training, psychological variables and other questions related to job satisfaction). To obtain information, they completed a questionnaire of 35 questions divided into 3 sections (Table 1). For the elaboration of this study, only 5 questions of the 35 in the questionnaire were used, as these questions were the ones focused on the objective of this research.

Table 1. Questionnaire sections and questions

Sections of the questionnaire	Questions
Demographic aspects (9 items)	Gender, age, years of dedication, nationality, division in which he/she trained or currently trains, highest category in which he/she trained and in which he/she most enjoyed
Distribution of the training session (19 items)	Number of sessions, time spent on different skills, technique, tactics, methodology and psychological variables
Other general aspects (7 items)	Aspects of satisfaction with the profession and changes in training during COVID-19

All study factors were treated as nominal or continuous variables, and the response format used in the instrument was closed-ended and open-ended. The reliability of the questionnaire was determined by standardising the survey administration protocol for all participants.

The questionnaires were completed online from August to September 2020. The questionnaire was available through Google Forms containing informed consent and information related to research ethics. These questions were randomly provided to coaches and members of the coaching staff of different clubs and, in turn, the presidency of the Football League and the Galician Football Federation were contacted to distribute the questionnaire among the coaches who have the following information.

Statistical analysis

Descriptive measures (frequencies, percentages, mean and standard deviation) were used to characterise the sample. All statistical analyses were performed with Stata version 12 (StataCorp., United States) and statistical significance was always established at a value of $p < 0.05$.

The ethical recommendations for research in the field of Sports Science (Aragón-Vargas, 2015) were followed at all times, maintaining the confidentiality of the data, the anonymity of the participants and informing them that they could cancel their participation in the study at any time during the study.

It was explained to all participants that the study respected the ethical principles of the Helsinki declaration and the Data Protection Act 15/1999 (Government of Spain, 1999).

Results

The average method most used by the coaches of the first division/national team, preferential and base for the work of the technique was the coerver with 28.6%, 18.8% and 17.4%. More specifically, those in the first division/national team and second division indicated that they preferred the analytical method with 28.6% and 25% respectively. These second division coaches also indicated an equal preference for general methods (25%), integral (25%) and simple individual exercises (25%). On the other hand, third division coaches used more the mixed method 29.4%; while regional coaches used more the methodised method 20.8%.

On the other hand, the global method was the most used on average by second division, preferential, regional and grassroots coaches for tactical work with 25%, 23.4%, 24.7% and 18.6% respectively. In addition, second division coaches also indicated an equal preference for integrated and collective methods (25% in both cases). However, first division/national team coaches preferred the analytical method (42.9%), while third division coaches preferred integrated and zone work (23.5% in both cases).

The variable indicated by the coaches of all divisions as the most important to work on in training was technique, except for the second division coaches who indicated that it was the psychological aspects (Table 2).

When asked about the most important quality to work on, the coaches, regardless of the division or category in which they trained, indicated that strength was the most important capacity to work on in their session planning (Table 3). Likewise, the work method preferred by the coaches, regardless of the division or category in which they trained for the development of the basic physical capacities was aerobic or analytical (Table 4).

When asked what they liked most about coaching, third division and regional coaches indicated that it was competing; for first division/national team, second division

Table 2. Most important variable to work on in training sessions

Current Division			Frequency	Percentage
Regional	Valid	Psychological aspects	19	24.7
		Technical	30	39.0
		Tactical	14	18.2
		All	11	14.3
		Strategy	3	3.9
		Total	77	100.0
Base/children	Valid	Psychological aspects	67	20.1
		Technical	108	32.4
		Tactical	63	18.9
		All	42	12.6
		Physical qualities	32	9.6
		Group management	8	2.4
		Strategy	12	3.6
		No opinion/no reply	1	0.3
		Total	333	100.0
Preferential	Valid	Psychological aspects	7	10.9
		Technical	25	39.1
		Tactical	12	18.8
		All	9	14.1
		Physical qualities	6	9.4
		Group management	1	1.6
		Strategy	2	3.1
		No opinion/no reply	1	1.6
		Total	63	98.4
	Valid	System	1	1.6
	Total		64	100.0
Second division	Valid	Psychological aspects	2	50.0
		Technical	1	25.0
		All	1	25.0
		Total	4	100.0
Third division	Valid	Psychological aspects	4	23.5
		Technical	9	52.9
		Tactical	1	5.9
		All	1	5.9
		Physical qualities	2	11.8
		Total	17	100.0
First division / National team	Valid	Technicians	4	57.1
		Tacticians	1	14.3
		All	1	14.3
		Physical qualities	1	14.3
		Total	7	100.0
No equipment	Valid	Psychological aspects	3	20.0
		Technical	6	40.0
		Tactical	3	20.0
		All	1	6.7
		Physical qualities	2	13.3
		Total	15	100.0

Table 3. Most important quality to work on

Current Division			Frequency	Percentage
Regional	Valid	Strength	31	40.3
		Endurance	20	26.0
		Speed	17	22.1
		Flexibility	9	11.7
		Total	77	100.0
Base/children	Valid	Strength	137	41.1
		Endurance	122	36.6
		Speed	60	18.0
		Flexibility	14	4.2
		Total	333	100.0
Preferential	Valid	Strength	22	34.4
		Endurance	22	34.4
		Speed	17	26.6
		Flexibility	3	4.7
		Total	64	100.0
Second division	Valid	Strength	4	100.0
Third division	Valid	Strength	7	41.2
		Endurance	5	29.4
		Speed	4	23.5
		Flexibility	1	5.9
		Total	17	100.0
First division / National team	Valid	Strength	3	42.9
		Endurance	2	28.6
		Speed	2	28.6
		Total	7	100.0
No equipment	Valid	Strength	2	13.3
		Endurance	10	66.7
		Speed	1	6.7
		Flexibility	2	13.3
		Total	15	100.0

and preferential division coaches it was programming and grassroots coaches indicated their preference for transmitting and teaching. The coaches, regardless of the division in which they coached, showed that what they liked least about coaching was the families and the environment. Regardless of age and years of professional dedication, the time spent training, expressed in minutes on average, was practically the same. Those over 40 spent more time on technique and strategy and those aged 31-39 on tactics and basic physical skills (Table 5).

Discussion

Work on technique and tactics

The results of this study indicated that coaches in all divisions (except those in the second division who indicated psychological aspects) indicated technique as the most important variable to work on in their sessions.

Lázaro Paulina et al. (2022) suggested that the assessment of coaches' and players' perception of competences to detect talent was similar for all dimensions, highlighting tactics, technique and psychosocial aspects. Following these contributions Sgrò et al. (2018) indicated that high level of technical skills and tactical behaviour are key factors for optimal performance in football matches. For Aedo-Muñoz et al. (2020) a technique-based biomechanical perspective could offer a promising strategy to improve, based on technique training and analysis, performance in football. Barquero-Ruiz et al. (2022) suggest that tactical training in introductory football, including team, small groups and individuals, favoured the understanding of the game and tactical learning. In other research (Bernal-Reyes et al., 2018) they evaluated fundamentals such as dribbling, ball handling and striking the ball with both feet and head. The results indicated that both groups improved in all technical fundamentals at the end of the training programme. For the design of an introductory football teaching programme,

Table 4. Preferred working method physical abilities

Current Division			Frequency	Percentage
Regional	Valid	Circuits	5	6,5
		Analytical	8	10.4
		Global	8	10.4
		Aerobic	12	15.6
		Own	7	9.1
		Autoloads	12	15.6
		Integrated	7	9.1
		With ball	4	5.2
		No opinion/no reply	14	18.2
		Total	77	100.0
Base/children	Valid	Circuits	29	8.7
		Analytical	32	9.6
		Global	36	10.8
		Aerobic	61	18.3
		Own	33	9.9
		Autoloads	28	8.4
		Integrated	26	7.8
		With ball	14	4.2
		No opinion/no reply	74	22.2
		Total	333	100.0
Preferential	Valid	Circuits	5	7.8
		Analytical	11	17.2
		Global	8	12.5
		Aerobic	11	17.2
		Own	9	14.1
		Autoloads	3	4.7
		Integrated	1	1.6
		No opinion/no reply	16	25.0
		Total	64	100.0
Second division	Valid	Global	1	25.0
		Aerobic	1	25.0
		Own	1	25.0
		With ball	1	25.0
		Total	4	100.0
Third division	Valid	Circuits	2	11.8
		Global	1	5.9
		Aerobic	6	35.3
		Own	2	11.8
		Integrated	1	5.9
		With ball	1	5.9
		No opinion/no reply	4	23.5
		Total	17	100.0
First division / National team	Valid	Circuits	1	14.3
		Analytical	3	42.9
		Global	1	14.3
		Aerobic	1	14.3
		With ball	1	14.3
		Total	7	100.0
No equipment	Valid	Circuits	1	6.7
		Analytical	4	26.7
		Global	3	20.0
		Aerobic	2	13.3
		With ball	1	6.7
		No opinion/no reply	4	26.7
		Total	15	100.0

Table 5. Bivariate correlations between the variables analysed

	A	YT	WTS	WTH	MT	WT	MOT	WTS	WTM	WPW	PWS	MBSS	MS
E	1.0000												
YT	0.5274*	1.0000											
WTS	0.0330*	0.1516*	1.0000										
WTH	0.0240	0.1277*	0.1639*	1.0000									
MT	0.0211	0.0982*	0.0530*	0.1068*	1.0000								
WT	0.0959*	0.1835*	0.6444*	0.1637*	-0.0597*	1.0000							
MOT	0.0683*	0.1098*	0.0249	0.0370*	0.1245*	0.1390*	1.0000						
WTS	0.0831*	0.1451*	0.4838*	0.1847*	0.0088	0.6003*	0.0764*	1.0000					
WTM	0.0117	0.0954*	0.1560*	0.1226*	0.1857*	0.1708*	0.3980*	0.2679*	1.0000				
WPW	0.1441*	0.1436*	0.4992*	0.1478*	-0.0241	0.4817*	0.1080*	0.4764*	0.1993*	1.0000			
PWS	0.0775*	0.1383*	0.0359*	0.1180*	0.1346*	0.1131*	0.3469*	0.1738*	0.5280*	0.1862*	1.0000		
MBSS	0.0770*	0.1326*	0.2855*	0.1466*	-0.0103	0.2483*	0.0671*	0.3749*	0.0550*	0.3285*	0.0765*	1.0000	
MS	0.1455*	0.0888*	0.0902*	0.0442*	0.0799*	0.0823*	0.1908*	0.1042*	0.2832*	0.0448*	0.1840*	0.1632*	1.0000

Note. *p<0.05. A: age; YT: years of training; WTS: weekly training sessions; WTH: weekly training hours; MT: minutes of training; WT: weeks of tactics; MOT: minutes of technique; WTS: weekly tactical sessions; WTM: weekly tactical minutes; WPW: weekly psychological work; PWS: psychological work session; MBSS: minutes of basic skills session; MS: minutes of strategy.

activities involving both models could be used to improve all technical gestures of the participants (Bernal-Reyes et al., 2018). Lasso Morales et al. (2023) show the importance of applying useful tools for the teaching of technical fundamentals at infant ages aimed at developing skills and abilities through the implementation of a guide of playful activities structured by the phases of initiation, organisation, development and completion.

Work on basic physical qualities

The results of this study showed that coaches, regardless of the division or category in which they develop their profession, indicated that strength is the most important capacity to work with athletes, with the aerobic or analytical method being the preferred one.

According to Bernal-Reyes et al. (2018) studies focused on the comparison of football teaching methodologies in sport initiation have not obtained conclusive results on which is the appropriate methodology in football teaching. The results of these authors (Bernal-Reyes et al., 2018) suggest that both the analytical and the global method seem adequate to improve the individual football skills of children in sport initiation. Following these contributions, Barrero (2023) developed two training sessions with two different methodologies, one traditional and the other with an active methodology, and the results showed that the active methodologies favoured learning and adherence to the sport and also obtained higher levels of satisfaction than the traditional methodologies. According to Motato Rodríguez and Quilindo (2021) the use of the methods implied adopting teaching styles that, although they give importance to traditional interaction, generate mixed styles mediated by the competitive interest of the coaches. This is a common factor among them, which provides a stance towards the training process in football involving children from 5 to 12 years old. For his part, Fernández Romo (2005) indicated that training tasks with collaboration and direct opposition simulating competitive actions is an effective method to improve the performance of each player and the team. For Marín-Pagán et al. (2020) the effects of circuit training could contribute to improve aerobic fitness and body composition in football players.

Sanmiguel-Rodríguez (2021b) indicated that sports injuries are becoming a major problem for professionals working with athletes and that it is necessary to identify the characteristics and types of injuries in order to be able to carry out more individualised and specific training. Other authors (Ayala-Obando et al., 2021) described the isometric exercises in the Physical Preparation of young football players, which strengthen certain skills and are preponderant for the practice of this sport. Physical factors include the development of flexibility, balance, strength and coordination, which together have an impact and prevent injuries. However, football clubs do not have a training plan for this type of exercise, which is why there is a lack of methodologies and a lack of knowledge on the part of the coach, making monotonous exercises that limit the athlete's potential (Ayala-Obando et al., 2021). Along these lines, Prieto-Barriga (2021) pointed out that agility is a key factor in the training of athletes and its in-depth study, diagnosis and improvement, through various training methods, could have a direct impact on the performance of football athletes from the grassroots level. In this way, plyometric training favours the development of agility and, at the same time, allows for the strengthening of certain physical capacities in child football players (Prieto-Barriga, 2021).

The ability to accurately control and monitor training load is an important aspect of effective training. The results of this study (Impellizzeri et al., 2004) indicated that training perceived exertion can be considered a good indicator of the overall internal load of football training. This method does not require particularly expensive equipment and can be very useful and practical for coaches to moni-

tor and control the internal load, and to design periodisation strategies. The results of other authors (Branquinho et al., 2020) indicated that the use of the continuous method seems to present the lowest physical impact tendency on internal and external loads compared to the fractional method. In addition, they found that the higher number of exercise repetitions in the fractional method increases the external load compared to the continuous method. The same authors (Branquinho et al., 2020) showed that the application of small sets by the fractional method tends to result in higher training loads. Branquinho et al., (2021) showed that the application of small-sided football games with different recovery times induced variable responses in training load. To maintain high physical performance and high training load, the fractional method with short recovery should be used. In contrast, to carefully manage the players' efforts and decrease the training response, continuous or fractional loading methods with longer recovery periods should be used. In contrast, results from other authors (Morin et al., 2017) showed that sprint training with very heavy sled resistance, using much higher loads than traditionally recommended, clearly increased maximal horizontal force production compared to standard sprint training with no load. The results of Mario Alves et al. (2010) suggested that complex contrast training induced an increase in sprint and jump squat performance, making it a suitable strategy for developing muscle power and speed in football players.

Likewise, according to Pastor Navarro (2004), strength training and its application to sports performance has evolved a great deal in recent decades, both in terms of its scientific foundations and its methods and means. However, there are still sports that, fundamentally, due to external factors, regardless of their characteristics and real needs, are very conservative and are reluctant to incorporate new methodologies, maintaining false conceptual ideas that end up becoming myths and impede their evolution (Pastor Navarro, 2004). For their part, Marín-Pagán et al. (2020) pointed out that strength training is a key factor for football players, but at the amateur level it is difficult to apply due to the lack of infrastructure and the short training time. In this sense, high-intensity resistance circuit-based training could be a suitable method to solve these problems. Circuit training can improve cardiorespiratory and metabolic responses while reducing training time by 66%. On the other hand, Beato et al. (2021) suggested that strength training, proposed as traditional resistance, eccentric and flywheel training, may be a valid method to reduce the risk of injury in athletes. Training strategies that involve multiple components such as a combination of strength, balance and plyometric exercises including strength exercises are effective in reducing injuries. In addition, the use of eccentric training in sports may offer physiological responses compared to other resistance exercise modalities (Beato et al., 2021).

Jovanovic et al. (2011) mentioned that a speed, agility and quickness training programme appear to be an effective way to improve some segments of power performance in young football players. Without proper planning of speed, agility and quickness training, football players are most likely to face a decrease in power performance during the competition period. In the same vein, Milanović et al. (2013) determined the effects of a conditioning programme including speed, agility and quickness training and its effect on agility performance in young football players. This suggests that training these qualities has been an effective way to improve agility, with and without the ball, for football players and can be included in fitness programmes.

Other studies

Furthermore, in another research (Dello Iacono et al., 2017) it was pointed out that training based on game profiles can be considered an advantageous training method for elite football players, capable of stimulating the physical effort and physiological capacities required during a match. This approach is favourable when designing a training intervention according to the principle of sport specificity, as it is based on specific metabolic demands. The results of Dello Iacono et al. (2021) suggest that both game profile-based training and reduced game situations (RSG) are effective for the development of physical fitness among young elite football players during competition. More importantly, these 2 conditioning methodologies can be considered in terms of specificity to selectively improve or maintain fitness-related performance in late-season football. Following these contributions, Sarmento et al. (2018) provided in their review, valuable information on the complex relationship between technical, tactical and physiological interactions in SSGs and how the manipulation of these types of variables can improve the football training process.

For Branquinho, Ferraz and Marques (2021) physical outcomes in football training can be influenced by the interaction of several variables during the performance of SSG. For this reason, it is relevant to understand how the manipulation of variables such as training method, exercise duration, number of repetitions or recovery time affect training loads and performance. The results showed that, during the 5-on-5 game format, the choice of training method (i.e. continuous or fractional) and the manipulation of related variables (number of players and game format) are critical for training load management. Therefore, the manipulation of variables using the 5-a-side football format translates into significant variations in training load and the likely improvement of the different domains of football training (physiological, physical, technical and tactical), evidencing several benefits in the use of this game format (Branquinho, Ferraz & Marques, 2021).

Clemente et al. (2014) carried out a comparison with other reduced game formats and 2 vs. 2 induced significantly higher values of technical/tactical indices, 3 vs. 3 induced significantly higher reserve values and 4 vs. 4 led to significantly higher distance and speed coverage. Other findings (Dellal et al., 2008) showed that some games in confined spaces allow the heart rate to increase to the same level as in intermittent running of short duration. The side game method can be used to provide more variety during training, mixing physical, technical and tactical training approaching the intensity of intermittent sprinting but with more variability between subjects. Sgrò et al. (2018) regarding the most used and innovative training methods, indicated that SSGs seem to be a worthy and valid methodology to simultaneously train many skills by reproducing various conditions of a real match.

Conclusions

The average method most used by the coaches has been the coerver for the work on technique. For tactical work they

prefer global methods. The coaches, regardless of the division or category in which they train, indicated that strength is the most important capacity in the planning of the sessions and that they do this by means of aerobic or analytical work. Regardless of the division in which they work, the coaches showed that what they enjoy most about their profession is programming and competing, while the grassroots coaches showed a preference for teaching. On the other hand, they indicated that the factor they liked least about their job was their families and environment. On the other hand, one of the main limitations has been the number of publications found in the different scientific databases focused on the subject of this study. However, a large part of these articles focus mainly on the study of the SSG. Therefore, the results of this study may be very useful for future technical bodies when it comes to understanding the preferences regarding the choice of methodologies in the different sessions.

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Conflict of interest

The authors declares that there is no conflict of interest.

References

Aguiar, M., Botelho, G., Lago, C., Maças, V., & Sampaio, J. (2012). A review on the effects of soccer small-sided games. *Journal of Human Kinetics, 33*(2012), 103-113. https://doi.org/10.2478/v10078-012-0049-x

Gaetano, R., & Rago, V. (2014). Preliminary study on effects of hiit-high intensity intermittent training in youth soccer players. *Journal of Physical Education and Sport, 14*(2), 148.

Sanmiguel-Rodríguez, A. (2021a). Degree of motivation and satisfaction of a Spanish second division football team (Grado de motivación y satisfacción de una plantilla de fútbol de la segunda división española). *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación,* 40, 109-116. https://doi.org/10.47197/retos.v1i40.79315

Martín, R. (2022). Periodización táctica y metodología de enseñanza-entrenamiento-aprendizaje en fútbol. Modelo de Juego. *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación,* 45, 693-703. https://doi.org/10.47197/retos.v45i0.92675

Branquinho, L.C., Ferraz, R., & Marques, M.C. (2020). The continuous and fractionated game format on the training load in small sided games in soccer. *The Open Sports Sciences Journal, 13*(1), 81-85. https://doi.org/10.2174/1875399X02013010081

Poveda, A., & Poveda, I. (2006). Consideraciones metodológicas sobre el entrenamiento en fútbol. *Training fútbol: Revista Técnica Profesional,* 121, 24-33.

Barrero, A.M. (2023). Efecto de dos métodos de entrenamiento sobre la motivación en porteros de fútbol formativo. *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación,* 48, 207-212. https://doi.org/10.47197/retos.v48.96937

Morocho, Á.D. (2022). Criterios de especialistas sobre indicadores técnico-tácticos de selección deportiva por funciones del juego en fútbol. Podium. *Revista de Ciencia y Tecnología en la Cultura Física, 17*(1), 313-324.

Morejón, J.M., & Martín, O.J. (2019). Aleación constitutiva estructurada, un tipo de entrenamiento para la condición física en el fútbol. *Ciencia y Deporte, 4*(1), 112-125.

Perlaza, F.A., & Chávez, E. (2014). Principios del ejercicio y su aplicación en el entrenamiento de fútbol. *Lecturas: Educación Física y Deportes,* 195, 13.

Lasso Morales, J.L., Marin, S.E., Albán, M.T., & Morales, B.R. (2023). Actividades lúdicas y enseñanza del manejo del balón en futbolistas de 8-10 años. *Lecturas: Educación Física y Deportes, 28*(299), 63-79. https://doi.org/10.46642/efd.v28i299.3921

Motato Rodríguez, L.A., & Quilindo, V.H. (2021). Enseñanza del fútbol e iniciación deportiva en dos escuelas deportivas de Santiago de Cali, Colombia. *VIREF Revista de Educación Física, 10*(1), 39-50.

Vargas-Cuenca, G.M., & Ávila-Mediavilla, C.M. (2022). Juegos predeportivos como estrategia metodológica en la práctica del fútbol en adolescentes escolarizados. *CIENCIAMATRIA, 8*(3), 713-737. https://doi.org/10.35381/cm.v8i3.800

Ruiz, A. (2004). Propuesta de planificación integral de contenidos de fútbol para categoría alevín. *Training Fútbol: Revista Técnica Profesional,* 102, 36-43.

Pinheiro, V., Camerino, O., & Richheimer, P.J. (2014). El fair play en la iniciación deportiva, un estudio con entrenadores de fútbol. *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación,* 25, 32-35. https://doi.org/10.47197/retos.v0i25.34471

Pons, E., Martín-Garcia, A., Guitart, M., Guerrero, I., Tarragó, J.R., Seirul·lo, F., Cos, F. (2020). Entrenamiento en deportes de equipo: El entrenamiento optimizador en el Fútbol Club Barcelona. *Apunts Educación Física y Deportes, 36*(142), 55-66. https://doi.org/10.5672/apunts.2014-0983.es.(2020/4).142.07

Pietro, M., & Filomena, M. (2019). Improvement in soccer learning and methodology for young athletes. *Journal of Physical Education and Sport,* 19, 795-801.

Fernández-Cortés, J., Escudero-Tena, A., Javier, G. R., & Ibáñez, S.J. (2020). La Importancia de la Localización del Partido en la Primera División Española de Fútbol. *Journal Sport Health Research, 12*(3), 285-294.

Morgans, R., Orme, P., Anderson, L., & Drust, B. (2014). Principles and practices of training for soccer. *Journal of Sport and Health Science, 3*(4), 251-257. https://doi.org/10.1016/j.jshs.2014.07.002

Ministerio de Cultura y Deporte (2023). Estadística de Deporte Federado. Madrid, mayo 2023. https://www.culturaydeporte.gob.es/dam/jcr:6b7e9a1a-e3e5-4b45-8ae5-6f187b50235f/estadistica-de-deporte-federado.pdf

Aragón-Vargas, L.F. (2015). La ética de la investigación científica (con énfasis en las ciencias del movimiento humano). *Pensar en Movimiento: Revista de Ciencias del Ejercicio y la Salud, 13*(2), 7. https://doi.org/10.15517/pensarmov.v13i2.20787

Lázaro Paulina, C.B., Gallardo, A.M., & García, M. (2022). Estudio de caso de la implementación de la evaluación de las competencias de los jugadores de fútbol en la

categoría cadete del Sevilla FC. *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación,* 43, 893-903. https://doi.org/10.47197/retos.v43i0.89711

Sgrò, F., Bracco, S., Pignato, S., & Lipoma, M. (2018). Small-sided games and technical skills in soccer training: Systematic review and implications for sport and physical education practitioners. *Journal of Sports Science, 6*(1), 9-19. https://doi.org/10.17265/2332-7839/2018.01.002

Aedo-Muñoz, E., Abarca-Reyes, V., Torres-Moreno, M.J., Bascuñan-Mosqueira, R., Brito, C.J., Miarka, B., ... & Poblete-Gálvez, C. (2020). Proposta de um modelo técnico de pontapé no futebol: Uma revisão sistemática das variáveis cinemáticas e cinéticas. *MHSalud: Revista en Ciencias del Movimiento Humano y Salud, 17*(2), 98-116. https://doi.org/10.15359/mhs.17-2.6

Barquero-Ruiz, C., Sánchez-De-San-Pedro, S., & Arias-Estero, J.L. (2022). Influencia de los niveles tácticos en fútbol escolar y extraescolar. Apunts. *Educación física y deportes, 4*(150), 67-73. https://doi.org/10.5672/apunts.2014-0983.es.(2022/4).150.08

Bernal-Reyes, F., Cabezón, J.M. Y., Gonzalez, M.Z., Romero-Pérez, E.M., & Gavotto-Nogal, O.I. (2018). Comparison between global and analytical training methodologies for the development of technical fundamentals skills during soccer initiation training on 8-9 and 10-11 years old children. *Biotecnia, 20*(2), 65-71. https://doi.org/10.18633/biotecnia.v20i2.600

Fernández Romo, G. (2005). La metodología de entrenamiento de situaciones reales. *Training fútbol: Revista Técnica Profesional,* 108, 34-43.

Marín-Pagán, C., Blazevich, A.J., Chung, LH., Romero-Arenas, S., Freitas, T.T., & Alcaraz, P.E. (2020). Acute physiological responses to high-intensity resistance circuit training vs. traditional strength training in soccer players. *Biology, 9*(11), 383. https://doi.org/10.3390/biology9110383

Sanmiguel-Rodríguez, A. (2021b). Injuries in High-Performance Football: A Systematic Review. *Sport Mont, 19*(3), 107-114. https://doi.org/10.26773/smj.211009

Ayala-Obando, D.A., Coque-Martinez, A.I., Arias-Moreno, E.R., Estrella-Patarón, C.P., & Caguana-Caguana, J.G. (2021). Los ejercicios isométricos como preparación física en el rendimiento deportivo de jóvenes futbolistas. *Polo del Conocimiento, 6*(6), 1279-1294.

Prieto-Barriga, W.F. (2021). Influencia del entrenamiento pliométrico en la agilidad, una aproximación teórica. *Revista digital: Actividad Física y Deporte, 7*(2). https://doi.org/10.31910/rdafd.v7.n2.2021.1615

Impellizzeri, F.M., Rampinini, E., Coutts, A.J., Sassi, A.L.D.O., & Marcora, S.M. (2004). Use of RPE-based training load in soccer. *Medicine & Science in sports & exercise, 36*(6), 1042-1047. https://doi.org/10.1249/01.MSS.0000128199.23901.2F

Branquinho, L., Ferraz, R., Travassos, B., & Marques, M. (2020). Comparison between continuous and fractionated game format on internal and external load in small-sided games in soccer. *International Journal of Environmental Research and Public Health, 17*(2), 405. https://doi.org/10.3390/ijerph17020405

Branquinho, L., Ferraz, R., Travassos, B., Marinho, D.A., & Marques, M.C. (2021). Effects of different recovery times on internal and external load during small-sided games in soccer. *Sports Health, 13*(4), 324-331. https://doi.org/10.1177/1941738121995469

Morin, J.B., Petrakos, G., Jiménez-Reyes, P., Brown, S. R., Samozino, P., & Cross, M.R. (2017). Very-heavy sled training for improving horizontal-force output in soccer players. *International Journal of Sports Physiology and Performance, 12*(6), 840-844. https://doi.org/10.1123/ijspp.2016-0444

Mario Alves, J.MV., Rebelo, A.N., Abrantes, C., & Sampaio, J. (2010). Short-term effects of complex and contrast training in soccer players' vertical jump, sprint, and agility abilities. *The Journal of Strength & Conditioning Research, 24*(4), 936-941. https://doi.org/10.1519/JSC.0b013e3181c7c5fd

Pastor Navarro, F.J. (2004). *Errores conceptuales frecuentes relacionados con el entrenamiento de la fuerza en el fútbol.* Lecturas: Educación Física y Deportes, 68, 39.

Beato, M., Maroto-Izquierdo, S., Turner, A.N., & Bishop, C. (2021). Implementing strength training strategies for injury prevention in soccer: scientific rationale and methodological recommendations. *International Journal of Sports Physiology and Performance, 16*(3), 456-461. https://doi.org/10.1123/ijspp.2020-0862

Jovanovic, M., Sporiš, G., Omrcen, D., & Fiorentini, F. (2011). Effects of speed, agility, quickness training method on power performance in elite soccer players. *The Journal of Strength & Conditioning Research, 25*(5), 1285-1292. https://doi.org/10.1519/JSC.0b013e3181d67c65

Milanović, Z., Sporiš, G., Trajković, N., James, N., & Šamija, K. (2013). Effects of a 12 week SAQ training programme on agility with and without the ball among young soccer players. *Journal of Sports Science & Medicine, 12*(1), 97.

Dello Iacono, A., Martone, D., Cular, D., Milic, M., & Padulo, J. (2017). Game Profile–Based Training in Soccer: A New Field Approach. *The Journal of Strength & Conditioning Research, 31*(12), 3333-3342. https://doi.org/10.1519/JSC.0000000000001768

Dello Iacono, A., Beato, M., & Unnithan, V. (2021). Comparative effects of game profile–based training and small-sided games on physical performance of elite young soccer players. *Journal of Strength and Conditioning Research, 35*(10), 2810-2817. https://doi.org/10.1519/JSC.0000000000003225

Sarmento, H., Clemente, F.M., Harper, L.D., Costa, I.T.D., Owen, A., & Figueiredo, A.J. (2018). Small sided games in soccer–a systematic review. *International Journal of Performance Analysis in Sport, 18*(5), 693-749. https://doi.org/10.1080/24748668.2018.1517288

Branquinho, L., Ferraz, R., & Marques, M.C. (2021). 5-a-Side Game as a Tool for the Coach in Soccer Training. *Strength and Conditioning Journal, 43*(5), 96-108. https://doi.org/10.1519/SSC.0000000000000629

Clemente, F.M., Wong, D.P., Martins, F.M.L., & Mendes, R.S. (2014). Acute effects of the number of players and scoring method on physiological, physical, and technical performance in small-sided soccer games. *Research in Sports Medicine, 22*(4), 380-397. https://doi.org/10.1080/15438627.2014.951761

Dellal, A., Chamari, K., Pintus, A., Girard, O., Cotte, T., & Keller, D. (2008). Heart rate responses during small-sided games and short intermittent running training in elite soccer players: a comparative study. *The Journal of Strength & Conditioning Research, 22*(5), 1449-1457. https://doi.org/10.1519/JSC.0b013e31817398c6

МЕТОДИКА НАВЧАННЯ ГРИ У ФУТБОЛ: БАЧЕННЯ ТРЕНЕРА

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Авторський вклад: A – дизайн дослідження; B – збір даних; C – статаналіз; D – підготовка рукопису; E – збір коштів

Реферат. Стаття: 11 с., 5 табл., 46 джерел.

Історія питання. Побудована на фундаментальних засадах тренувань, методика, яку кожен тренер розробляє під час планування занять, може бути ефективною для покращення результативності їхніх спортсменів.

Мета дослідження. Таким чином, загальною метою цього дослідження було з'ясувати тип роботи, яку виконують тренерські штаби в різних командах/клубах.

Матеріали та методи. Для цієї роботи було проведене описове перехресне дослідження на вибірці з 517 тренерів з різних дивізіонів і націй. Щоб охарактеризувати вибірку, використовували описові показники, а для визначення наявності зв'язку між досліджуваними змінними використовували критерій хі-квадрат Пірсона. Усі статистичні аналізи проводили за допомогою програмного забезпечення Stata, а статистичну значущість завжди встановлювали на рівні $p < 0,05$.

Результати. Результати показали, що тренери віддавали перевагу методиці роботи над технікою методом Курвера та аналітичним методом. Глобальний та аналітичний методи тренери в середньому найбільше використовували для тактичної роботи. Тренери, незалежно від дивізіону чи категорії, у яких вони тренують, зазначили, що найважливішою здатністю, над якою потрібно працювати, є сила.

Висновки. Результати цього дослідження можуть бути дуже корисними для майбутніх тренерських штабів під час розподілу тренувальних занять і навантажень.

Ключові слова: футбол, методика, тренування, тренери, тренерський штаб.

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