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Original

EFECTOS DE UN PROGRAMA DE ENTRENAMIENTO DE FUERZA CON AUTOCARGAS SOBRE EL RENDIMIENTO DE SALTO CON CONTRAMOVIMIENTO Y LA COMPOSICIÓN CORPORAL EN JUGADORES DE FÚTBOL JÓVENES

EFFECTS OF A STRENGTH TRAINING PROGRAM WITH SELF LOADING ON COUNTERMOVEMENT JUMP PERFORMANCE AND BODY COMPOSITION IN YOUNG SOCCER PLAYERS

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RESUMEN

El propósito de esta investigación fue investigar los efectos de un programa de entrenamiento de fuerza con autocargas (EFA) sobre el rendimiento de salto con contramovimiento (CMJ) y la composición corporal (CC) en jugadores de fútbol jóvenes. 60 jugadores jóvenes fueron distribuidos en 4 grupos [Sub16 (14,67 ± 0,49 años); Sub17 (15,73 ± 0,46); Sub18 (16,67 ± 0,82); Sub19 (18,27 ± 0,46)]. Completaron un entrenamiento de fuerza con autocargas durante 8 semanas con una frecuencia de entrenamiento semanal de 2 sesiones de 1 hora por semana. CMJ fue evaluado con la aplicación My Jump® y CC mediante el método de Bioimpedancia (BIA). Los datos fueron recolectados antes y después de la intervención. Se calculó el tamaño del efecto (TE) y un nivel de significación de p<0,05. Los principales resultados del estudio mostraron un aumento significativo en el grupo Sub19 (p<0,01) en el rendimiento del CMJ. Una disminución significativa de la masa corporal en el grupo Sub17 (p<0,001). Los grupos Sub17 y Sub19 mostraron una disminución significativa en % de masa grasa (p<0,001) y, por último, se produjo un aumento significativo en la masa muscular (p<0,001) en todos los grupos. El presente estudio confirma que el entrenamiento de fuerza con autocargas es un método válido para producir cambios a nivel neuromuscular y la modificación de composición corporal en jugadores jóvenes de fútbol.

Palabras clave: fútbol, adolescentes, rendimiento, entrenamiento neuromuscular, masa muscular, % grasa corporal.

ABSTRACT

The purpose of this study was to investigate the effects of self-loading strength training program (SLSTP) on countermovement jump performance (CMJ) and body composition (BC) in young soccer players. 60 young soccer players were distributed in 4 groups [U16 14,67 ± 0,49 years); U17 (15,73 ± 0,46); U18 (16,67 ± 0,82); U19 (18,27 ± 0,46)]. Completed a strength training program with self-loading during 8 weeks with weekly training frequency of 2 sessions of 1 hour per week. CMJ performed with the app My Jump® and BC were analyzed with Bioelectrical Impedance Analysis method (BIA). Data were collected pre- and post-intervention. The effect size (ES) was calculated and a level of significance of p<0,05. The main results of the study showed a significant increase in U19 group (p<0.01) in CMJ performance. A significant decrease in body mass in U17 group (p<0.001). U17 and U19 groups showed a significant decrease in % fat mass (p<0.001) and, finally, there was a significant increase in lean mass (p <0.001) in all groups.

The present study confirms that the strength training with self-loading is a valid method to produce changes at the neuromuscular level and modification of body composition in young soccer players.

Keywords: soccer, adolescent, performance, neuromuscular training, lean mass, % body fat.

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INTRODUCTION

In the last ten years, strength training (ST) has become very important in soccer coach's planning (Wong, Chaouachi, Chamari, Dellal & Wisloff, 2010) and its relationship to high performance soccer (Arriscado & Martínez, 2017; Bogdanis et al., 2011; Lago-Peñas, Rey, Lago-Ballesteros, Casáis & Domínguez, 2011). In this regard, the central goal of ST is to improve the players´ specific and relevant soccer activities inherent to the game (Silva, Nassis & Rebelo, 2015). Different resistance training methodologies have been used to improve physical performance in soccer, such as programs bases on traditional exercises, eccentric-overload training, plyometric training, ballistic exercises, olympic exercises, weight lifting and a combination of different methods (Raya-González & Sánchez-Sánchez, 2018; Suárez-Arrones et al.,, 2019; Suárez-Arrones et al., 2018b). Although these methods are accompanied by expensive material. However, not all institutions have a budget for these materials, for this reason the coach's and fitness coaches try to find valid, simple and economic resources for ST. A generally used method is the based on self-loading (own body mass) (Harrison, 2010; Klika & Jordan, 2013). This methodology is widely used and researched in pre-puberal, younger groups (Faigenbaum & Myer, 2010; Peña, Heredia, Lloret, Martín, & Da Silva-Grigoletto, 2016) and elderly people (Kanda et al., 2018; Tsuzuku et al., 2007; Watanabe et al.,2015) but it is not investigated enough in soccer. Nonetheless, in most cases this methodology of ST, demands high effort from young players otherwise movements can be done with little control during execution (Navarro & Javier, 2007). Therefore, a lot more research is needed in this important topic.

The impact of ST on measures of athletic performance such as sprinting, agility, and vertical jumping remains controversial (Hammami, Negra, Shephard, & Chelly 2017). One of the valid tests to observe the adaptation in training is the countermovement jump (CMJ) (Di Giminiani & Visca, 2017; Thomas, French & Hayes, 2009). Traditionally, the CMJ test is a standard measure of lower body power (McMahon, Jones, Suchomel, Lake & Comfort, 2017). In addition, has been demonstrated a relationship between ST and CMJ improvement (Bridgeman, McGuigan, Gill & Dulson, 2018; Comfort, Stewart, Bloom & Clarkson, 2014). Currently, we know about the activity profile of high intensity intermittent characters of soccer competition such as accelerations and decelerations, linear sprints, changes of direction and jumps (Otero-Esquina, De Hoyo, Gonzalo-Skok, Domínguez-Cobo & Sánchez, 2017; Sáez de Villarreal, Suárez-Arrones, Requena, Haff & Ferrete, 2015). Therefore, we suggest that soccer players need high levels of muscular strength, especially in their lower body to perform previous types of high intensity actions mentioned (Michailidis et al., 2013), this underlines the importance of ST. Consequently, it is essential that the ST work is done at an early age for players of children, youth and adults to obtain optimal performance (Sáez de Villarreal et al., 2015).

Recently, researchs in soccer have described changes in body composition (BC) after ST (Barjaste & Mirzaei, 2018; Castiblanco & Suárez, 2013; Suárez-Arrones et al., 2019; Suárez-Arrones et al., 2018b). The influence of ST on BC has become an important research topic given that the prevalence of obesity in children and adolescents continues to increase (Faigenbaum & Myer, 2010). Furthermore, to date, no study has assessed the effect of ST with self-loading on BC in young male soccer players. BC is a key fitness element relevant to football player performance (Suárez-Arrones et al., 2019). Kalapotharakos, Strimpakos, Vithoulka & Karvounidis (2006), showed that professional teams with the best position in the classification, presented low values of % fat compared to the teams of medium and low position of the same division. Thus, while there are not clear standards on what would be the "ideal" BC for a soccer player, practitioners are likely to search for relatively low levels of fat mass (Suárez-Arrones et al., 2018) and the maintenance of the adequate skeletal muscle mass compatible with the locomotor demands imposed by soccer (Suárez-Arrones et al., 2018b). The BC of young people undergoes rapid changes during their growth spurts, with substantial changes in height and weight (Tanner, Whitehouse & Takaishi, 1966). In addition, the best longitudinal predictor for leg power in late-adolescence football players was fat-free mass (Suárez-Arrones et al., 2019).

To our knowledge, there is no previous research that has evaluated the effects of a ST program with self-loading on CMJ performance and BC in soccer players. Therefore, the aim of the present study was to describe the changes in CMJ performance and BC with 2 self-loading ST sessions a week for 8 weeks in young male soccer players. On the basis of the previous research on ST program with self-loading, we expected that after completion our proposed ST program the players would improve their CMJ and improve the development of lean mass.

METHODS

Participants

Sixty male's soccer players began the present study. The players were arranged in 4 groups according to their age [U16 (n: 15; age= 14.67 ± 0.49 years; height= 171.33 ± 5.12 cm; U17 (n: 15; age= 15.73 ± 0.46 years; height= 173.73 ± 6.02 cm; U18 (n: 15; age= 16.67 ± 0.82 years; height= 175.80 ± 6.32 cm; U19 (n:15; age= 18.27 ± 0.46 years; height= 175.87 ± 6.21 cm]. The selected participants were those who had previous experience in ST with self-loading. All participants had been playing soccer for more than five years and at the time of the present research they were recruited in High-Performance Soccer Academy. In fact, all participants were recruited via flyers and they reported normal or corrected to normal vision, had no history of neurological of physical disorders, and gave informed consent prior to the start of the experiment. Eight players were excluded [three U16, two U17 (temporary participation) and three U19 (injured during the study). The players practiced 5 times per week, 90 min per session, with an official competition every weekend. All players participated in 16 proposed sessions (100%). All participants and parents were carefully informed of the experimental procedures and possible risk and benefits associated with participation in the study. The study was conducted in accordance with the Declaration of Helsinki and approved by the Ethics Committee of the Pablo de Olavide University.

Procedures

The current research used the independent variable (self-loading strength training program SLSTP), to determine if significant differences existed between the pre-test and post-test of the dependent variables (CMJ performance and BC). The SLSTP intervention workouts were scheduled as 1-hour sessions twice per week, during 8-week period. The evaluations were carried out before and after the interventions. The participants visited the soccer lab in two separate occasions (pre and post-intervention), always at the same time of the day (between 16:30 and 18:30 pm). All evaluations were supervised by the same 3 fitness coaches and under the same established pattern of action. The data was collected in paper format and integrated into the Excel program of Microsfot Office®.

CMJ performance. The evaluation was performed with the app My Jump® (Balsalobre-Fernández, Glaister & Lockey, 2015a; Muñoz et al., 2018) using a Tablet IPAD® (model Air 2, Yerba Buena Center, California). The protocol followed with My Jump® started with the registration of the soccer players in the app. Once a player was registered, his jump was recorded using the high-speed camera featured in the Tablet IPAD®. Then, the last take-off photogram and the first landing photogram were selected, and the app provided the height of jump variable. CMJ was performed with both hands on the hip releasing a countermovement until the knee's flexion was approximately 90º, jumping as high as possible maintaining the lower extremities extended during the entire flight phase (Balsalobre-Fernández, Nevado-Garrosa, del Campo-Vecino & Ganancias-Gómez, 2015b; Castro-Piñero et al.,2010). If any of these requirements was not met, the trial was repeated. Participants performed a standardized 10-minute warm-up before the CMJ evaluation. The warm-up included low-intensity continuous jogging (5-min), dynamic stretching, articular motion exercises (3 min) and finally, 6 CMJ carried out with increasing intensity (2 min). After the warm-up there was a 5-minute period of recuperation, after which 3 CMJ jumps were carried out with 1-minute of rest between repetitions (Comfort et al., 2014).

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BC. Stature of soccer players was measured with a stadiometer (Seca® 206, Hamburg, Germany). The BC was performed in the morning (8:00 am) of evaluation days. The variables body mass (BM), % fat mass (% FM) and lean mass (LM) were analyzed with Bioelectrical Impedance Analysis method (BIA) using a TANITA® (MC-980MA PLUS, Arlington Heights, Illinois), where the players go up without footwear, without breakfast (Falces-Prieto, 2017) and wore only shorts and removed any metal and jewelry prior to assessment (Suárez-Arrones et al., 2019). BIA is a widely used method for estimating BC (García-Soidán et al.,2014; Serrano et al.,2007) and offers a method to non-invasively assess the fluid distribution and BC of soccer players (Fassini et al., 2017).

Pre-intervention. Players had a period of familiarization with this type of SLSTP . Before the start of treatment, several previous sessions were held so that the players could correctly perform the technical execution of all exercises that the SLSTP consisted of. All the evaluations were performed in the same time and space, with the usual clothing for the soccer player, the specific footwear and supervised by the same technical specialists. Players selected for this study visited the laboratory and were evaluated in a session of approximately 2 hours and under similar weather conditions (~22ºC and ~60 % humidity). The evaluations were made 48 hours before the start of the 8-week intervention.

Intervention. The players completed a SLSTP for 8 weeks, to determine the effects on CMJ performance and BC. Our SLSTP follows recommendations of experts in the topic (Peña et al., 2016), given that it had a weekly training frequency of 2 sessions of 1 hour per week and was developed over 8 weeks (between the months of September-October 2018). The recovery time between exercises was 1 min 30 seconds. During the intervention, all the players performed the same ST programme (See table 1).

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Table 1. Detailed description of the 8-week SLSTP.

Weeks *Exercise/ Session*	*W1* *S1-S2*	*W2* *S3-S4*	*W3* *S5-S6*	*W4* *S7- S8*	*W5* *S9-S10*	*W6* *S11-S12*	*W7* *S13-S14*	*W8* *S15-S16*
Normal Push-ups	4x15	4x15	4x12	4x12	4x10	4x10	4x8	4x8
Unilateral row TRX	4x15	4x15	4x12	4x12	4x10	4x10	4x8	4x8
Bíceps unilateral TRX	4x15	4x15	4x12	4x12	4x10	4x10	4x8	4x8
Declined Push-ups	4x5	4x5	4x8	4x8	4x10	4x10	4x12	4x12
Launch Medical Ball*	4x15	4x15	4x12	4x12	4x10	4x10	4x8	4x8
Unilateral Jump TRX	4x15	4x12	4x10	4x10	4x8	4x8	4x6	4x6
Bipodal Jump TRX	4x15	4x12	4x10	4x10	4x8	4x8	4x6	4x6
Lunge TRX	4x15	4x12	4x10	4x10	4x8	4x8	4x6	4x6
Flexo-extension hamstrings with fitball	4x15	4x12	4x10	4x10	4x8	4x8	4x6	4x6
Unipodal bridge	4x15	4x12	4x10	4x10	4x8	4x8	4x6	4x6
Nordic hamstrings	4x10	4x10	4x8	4x8	4x8	4x8	4x6	4x6

*Abbreviations: W, Weeks; S, Session; series x repetitions; Note: *External load (4 kg); TRX, suspension training material. Recovery time between series 2 minutes. Recovery time between repetitions 30 seconds.*

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Post-Intervention. The post-intervention was performed 48 hours after the last training session and under the same conditions as in the pre-intervention.

Statical Analyses

Descriptive statistics were represented as mean (SD). Tests of normal distribution and homogeneity (Kolmogorov-Smirnov and Levene's) were conducted on all data before analysis. Wilcoxon test was used for determining within-group differences as a repeated measure analysis (pre-post). Additionally, a t-test was used to compare the CMJ performance and BC (BM, % FM and LM) pre-post recorded during the experiment. Effect size (ES) was indicated with Cohen's d (Cohen, 1992) to evaluate magnitude of differences. The level of significance was $p<0.05$. Data analysis was performed using Statistica (version 10 by Statsoft, Santa Clara, California).

RESULTS

CMJ performance

Changes in CMJ performance after SLSTP are shown in Table 2. Only significant differences were observed ($p<0,01$) in U19 group between pre and post-test (34,37 ± 4,09 and 37,12 ± 4,63).

Table 2. CMJ performance of the different groups in the pre- and post-intervention.

	CMJ			
	Pre	**Post**	**P**	**ES**
U16	35,19 (4,60)	36,66 (5,04)	0,11	-0,30
U17	34,48 (4,71)	34,44 (4,22)	0.96	0,008
U18	35,19 (4,60)	36,67 (5,05)	0,11	-0,30
U19	34.37 (4,09)	37.12 (4,63)	0,01*	0,62

**Significant difference Pre–Post (P < 0,05). Effect size (ES). Note: Data are presented as mean (SD).*

BC

Changes in BC after SLSTP are shown in Table 3. Significant decrease ($p<0,001$) in BM only in U17 group (66,42 ± 7,24 and 65,82 ± 7,20). % FM was significantly reduced ($p<0,001$) in U17 (13,25 ± 1,84 and 12,54 ± 1,55) and U19 (12,73 ± 2,37 and 12,11 ± 1,75) respectively. Finally, groups U16 (55,68 ± 5,36 and 56,77 ± 5,52), U17 (57,56 ± 5,96 and 58,60 ± 5,89), U18 (58,05 ± 5,16 and 59,54 ± 5,76) and U19 (55,68 ± 5,36 and 56,77 ± 5,52), showed that LM was increased significantly ($p<0,001$) after SLSTP.

Table 3. BC variables between pre- and post-intervention.

	BC			
	BM (Kg)			
	Pre	**Post**	**P**	**ES**
U16	66,36 (6,41)	66,99 (6,96)	0,09	-0,09
U17	66,42 (7,24)	65,82 (7,20)	0,001*	0,08
U18	66,37 (6,99)	66,99 (6,66)	0,09	0,09
U19	63,90 (6,89)	63,69 (6,76)	0,40	0,03
	% BF			
U16	12,44 (2,20)	11,79 (1,85)	0,05	0,31
U17	13,25 (1,84)	12,54 (1,55)	0,001*	0,41
U18	12,44 (2,21)	11,80 (1,86)	0,05	0,31
U19	12,73 (2,37)	12,11 (1,75)	0,001*	0,29
	LM (Kg)			
U16	55,68 (5,36)	56,77 (5,52)	0,001*	0,27
U17	57,56 (5,96)	58,60 (5,89)	0,001*	0,17
U18	58,05 (5,16)	59,54 (5,76)	0,001*	0,28
U19	55,68 (5,36)	56,77 (5,52)	0,001*	0,20

**Significant difference Pre–Post (P < .05). Effect size (ES). Note: Data are presented as mean (SD). Kg: Kilograms.*

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DISCUSSION

The present study analyzed the effects of 2 SLSTP sessions a week for 8 weeks on CMJ performance and BC in young soccer players. Previous investigations conducted on young soccer players have reported typically greater training effects [ES: 0,86 (Christou et al.,2006); ES: 0,62 (Chelly et al., 2009)] after a ST program with either moderate or heavy loads, respectively. On the other hand, Kanda et al., (2018), showed that types of low-intensity exercise with slow movement (LST) with self-loading training also had an improvement effect on motor function and that the effect was similar that of LST training completed using exercise machines. However, according to our knowledge, it is the first study that relates this methodology of SLSTP on CMJ performance and BC in young soccer players.

Although the groups U16 and U18 improved the CMJ performance, the results of present study, confirmed mainly that the CMJ performance only showed a significant increase in the U19 group ($p<0,01$), confirming the hypothesis of the study only in this group. Our results were similar to those found by Malina, Eisenmann, Cumming, Ribeiro & Aroso (2004), which, indicated that the improvement in jumping ability seems to go parallel to the biological maturation of young soccer players. Therefore, this effect could be attributed to the greater amount of testosterone produced, which would enhance the nervous system and favor the phenotypic expression of fast fibers (Almaiman, 2018).

Our results are in agreement with various studies, De Hoyo et al., (2016), analyzed the effects of 3 different low/moderate load ST methods (full-back squat, resisted sprint with sled towing, and plyometric and specific drills training) in U19 elite soccer players on sprinting, jumping, and change of direction abilities in soccer players with 2 specific ST sessions per week, in addition to their normal training sessions for 8 weeks. Substantial improvements were found in every group in comparison to pretest results in CMJ performance ([ES]: (0,50– 0,57). Comfort et al., (2014), showed that a training with maximal back squat strength in 34 young soccer players trained for half a season combining 4-5 sessions of specific technical-tactical training plus 2 sessions of ST per week, improving parameters in CMJ ($r = 0,760$, $p<0,001$). Christou et al., (2006), showed significant improvements in CMJ performance (29,0 ± 1,6 and 32,9 ± 1,4, $p<0,05$, ES 1,49) in U15 soccer players with maximal ST with a load 55–80% of 1 repetition maximum (1RM) 2 times per week after 8 weeks. Regarding the U17 group (34,48 ± 4,71 and 34,44 ± 4,22, $p<0,96$), our results were in accordance with the study of Romero-Boza, Feria-Madueño, Sañudo-Corrales, De Hoyo & Del Ojo-López, (2014), where they evaluated the effect of a ST in isoinertial system for 15 weeks in young elite players on CMJ performance, without obtaining significant changes in this variable of analysis, so we could conclude, that this type of SLSTP with the specified duration had no effects on CMJ performance in this group. These findings highlight the importance of assessing muscular strength from early ages (Castro-Piñero et al., 2010). Researchs in soccer have described changes in BC after ST (Barjaste & Mirzaei, 2018; Castiblanco & Suárez, 2013; Suárez-Arrones et al., 2019; Suárez-Arrones et al., 2018b). To our knowledge, no research study has described the effects of SLSTP in soccer on BC. With respect to the variable BM only the U17 group ($p<0,001$), showed a significant decrease from pre to post-test. Our data are in accordance with the study of Castrillón, Torres-Luque & de León (2009), in which, they carried out a program of ST in intermittent circuit with overloads, 3 times per week, between 62-72% of 1RM during 8 weeks, observing a decrease in BM of 2.04 %. Excess of FM and insufficient fat-free mass (FFM) could have a negative impact on performance (Bunc, Hráský & Skalská, 2015). Also interesting is the fact that young soccer players show a high percentage of body fat due to absolute low levels of lean mass and not high levels of fat mass per se (Milsom, Naughton, O'Boyle, Iqbal, Morgans, Drust, & Morton, 2015). % FM data in groups U16 and U18 decreased after the SLSTP, although they were not significant as in the study of Christou et al., (2006). However, U17 ($p<0,001$) and U19 ($p<0,001$) groups reduced it significantly after 8 weeks. Similar results were found in the study of Haghighi, Moghadasi, Nikseresht, Torkfar & Haghighi (2012). They showed a significant decrease in % FM in thirty elite young soccer players (age, 16-21 years) ($p<0,05$) after 8 weeks of plyometric training. In the same way, Suárez-Arrones et al., (2018b), showed a significant decrease in % FM (ES= -0,99 ± 0,54) after 2 inertial eccentric-overload training sessions a week during a season in young soccer (17,5 ± 0,8 years).

We must bear in mind the young soccer players demonstrate a lack of maturational and sporting development, which according to the evidence makes them less physically fit to face the physical demands typical of professional football (Jorquera-Aguilera, Rodríguez-Rodríguez, Torrealba-Vieira & Barraza-Gómez, 2012). Perroni, Vetrano, Camolese, Guidetti & Baldari, (2015), demonstrated that with higher of LM, they allow the player to avoid traumatic injuries derived from contact. With respect to LM, the SLSTP loading showed significant improvements ($p<0,001$) in all groups (U16, U17, U18 and U19 respectively), confirming our second hypothesis. This coincides with the proposed by Milsom et al., (2015), which suggested that training should be more focused on the gain of LM and not the reduction of FM. So, all players have developed this increase in LM through the training process. Our results are in agreement with Pérez-Gómez et al., (2008), where they analyzed the effects of a ST program consisting of weight lifting combined with plyometric exercises followed a periodised 6 weeks with 3 sessions/week in U16 soccer players. Training resulted in an enlargement in lower limb LM (9,3 ± 0,3 and 9,7 ± 0,3, $p<0,05$), which was significantly greater than the small increase observer in the control group. Suárez-Arrones et al., (2018b), also showed an increased during the competitive season in FM (2,5 ± 0,8%, ES = 0,25 ± 0,09) after ST.

Established scientific organizations recommend ST program for young people to enhance muscular strength, prevent sport injuries, improve performance in sports and recreational activities, and affect health and lifestyle in a positive way (Christou et al., 2016). In addition, this study can be part of the growing body of knowledge that shows significant improvements in children and adolescents on the improvement of their BC after the progressive participation in ST programs (Peña et al., 2016). Several limitations should be mentioned in this study. As in some studies conducted on high level athletes, this research was limited by the absence of a control group (Iacono, Eliakim & Meckel, 2015). Although the use of BIA for BF estimation is ineffective (Urrejola, Hodgson, Isabel, Icaza & Gloria, 2001), is a widely used method for estimating BC (García-Soidán et al., 2014; Serrano et al., 2007), besides being a simple technique, fast and with great acceptability in children (Houtkooper, Lohman, Going & Howell, 1996; Urrejola et al., 2001). Another limitation was no nutritional guidelines were marked for the players during the study. Due to the scarce existing bibliography, it would be interesting more research on the effects that SLSTP on neuromuscular performance, biological maturation, BC and anthropometric characteristics, in young and adult athletes.

CONCLUSIONS

In conclusion, the present ST method used in this study seem to be valid and effective to improve changes at the neuromuscular level of the lower limbs and modification of BC in young soccer players. We must bear in mind that young footballers show a lack of maturational development, even so, it is an effective methodology for the development of LM in all categories so it should be implemented from an early age as an effective method of muscle development and get better future adaptations to ST. Therefore, it should be considered during the prescription of ST by coaches and fitness coaches of any sport modality.

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