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Overall playing ability and skill performance parameters response to the ladder training after small side games of grassroots soccer boys

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Abstract

This study investigated the overall playing ability and skill performance parameters response to the ladder training after small side games of grassroots soccer boys. To achieve the purpose of the study 30 grassroots soccer boys were selected from Football club Kovai, Coimbatore. The subjects were randomly assigned to two equal groups (n=15). Group- I underwent ladder training after small side games training group (LTWBDG) and group - II was acted as control group (CG). The ladder training after ball drills training was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of twelve weeks. The control group was not given any sort of training except their routine work. The overall playing ability and skill performance parameters of dribbling (Warner's Soccer test), kicking ability (Warner's Soccer test) and overall playing ability (judges rating) were assessed before and after training period of 12 weeks the data collected from the subjects was statistically analysed with 't' test to find out significant improvement if any at 0.05 level of confidence. The result of the dribbling, kicking ability and overall playing ability speculated significant improvement due to influence of ladder training after small side games with the limitations of (diet, climate, life style) status and previous training. The result of the present study coincide findings of the investigation done by different experts in the field of sports sciences. Influence of ladder training after small side games significantly improved dribbling, kicking ability and overall playing ability of grassroots soccer boys.

Keywords: Ladder training, Small side games, Dribbling ability, Kicking ability and Overall playing ability

Introduction

Physical fitness plays vital role in every human beings life to maintain a good health. There are various ways to acquire physical fitness; one of them is by doing physical activity (Sports). Exercise is a major activity that has an impact on human routine. It is understood that the sport is related to motion and motion will not be separated from human activity. Many human ways to do this activity such as walking, running, jumping, punching and stretching that accelerates with the term motion. Motion in sports activities is motion that has a purpose. (Mylsidayu, 2015) [4].

Soccer, in its global development and in its current stage it has a standard feature among high-performance teams and there is a gradual increasing effort throughout the game to win. The particular game has become perfectly balanced with offensive, very collective and with full rhythm and with complete athletic training with total physical commitment (Barengo., 2017) [1]. This game dramatically demands the manifestation of the physical factor determined by the content of the effort. Increasing the driving density in every unit of time is explained by a high number of gaming actions. A player of the world's elite football teams performs in 1-2 minutes or even 3, speeds, a jump, an air duel or an individual technical action. In general, all the minutes of the game are active, and even if some effort can stagnate, it is done with the intent of amplifying it in the next stages. As for the motoring qualities, there is a predominance of velocity manifested in its forms of movement, execution, reaction; as well as the placement, movement, and handling of the ball. Speed is correlated with other driving qualities and is carried out in a resistance and force regime with the decisive role of skill in achieving technical tactical combinations. (Negra, 2016) [3].

It is important that soccer players must be able to perform effectively in various complex dynamic movement with (i.e., passes, kicking, dribbling, heading) and without the ball (i.e., modulating running speed and changes of direction, accelerations, decelerations, jumps) in response to unpredictable environments conditioned by the ball, teammates, and opponents (Cortis *et al.*, 2013) [9]. Performance of such complex dynamic movements is linked to coordination abilities. In soccer sports coordination plays a vital role and the levels of coordination have a higher ability to acquire specific skills in sports and through that an individual can master new movements quickly.

The results show that specific training, conducted during a competitive season with appropriate methods and means, improves the performance of the footballers.

Ladder Training

In the field of sports, such as soccer, martial arts, athletic and futsal the most important thing is speed, agility and power which plays very significant role to accelerate and increase an achievement. In last few years it was identified that there is a development and very enjoyable training method using fitness equipment used in a variety of sports. Form of ladder exercise that is needed to improve the speed, agility, and foot coordination of athletes. This agility ladder technique is also very popular among trainers looking for ways to improve speed, coordination, balance, and agility in athletes, (Syairulniza, 2015) [6]. Most ladder drills are made of plastic attached to a nylon rope to form a box. Usually the box is determined about 12-18 inches (30-46 cm). The standard ladder is 10 yards long. Agility ladder is not only a tool that can be used to develop foot speed, but when it is used in a variety of ways, agility ladder can be a multipurpose tool that can also improve agility and power. Recent research has shown that ladder drills can improve speed, agility and power (Sethu, 2014) [5]. Thus, it can be concluded that ladder drills are a tool for training different patterns of foot movements through staircase exercises placed on the ground / floor where an athlete is required to jump, move right and left quickly. This exercise is an excellent form of activity to improve the ability of the physical condition because it makes the whole body move, especially those that require explosive power capabilities such as jumping, hitting, kicking, and running fast. At the higher skill levels, technical performance may be limited by physical characteristics as well as physical fitness, and performance characteristics (Saini, 1996; Sidhu *et al*, 1984) [27, 28].

During a 90-minute soccer match, professional soccer player makes numerous explosive bursts, like kicking, tackling, jumping, turning, sprinting, and changing pace. Plyometric drills usually involve stopping, starting, and changing directions in an explosive manner. These movements are components that can assist in developing skill performance in soccer players (Haghighi, 2012) [8].

Small Side Games

Physiological, social, psychological, technical and tactical factors can influence the performance of soccer players (Bagsbo, 1994) [26]. In high performance sports it has been well accepted that the maximum benefits of exercises are achieved when the training stimuli are similar to the competitive demands (Navarro, 2008) [25]. Teachers and educators of children of that age should strive to see children with smiles on their faces, running, jumping kicking a ball and having fun. Those children want to play football mainly for three reasons enjoy the experience with their friends, improve their physical competence in activities / drills and attain social acceptance and approval of their friends, peers, parents and teachers/educators. It is obvious that those children are in a very fragile age. A clear understanding of child development is necessary, as well as the knowledge of the correct way of interacting. The intention with this age group is to start again with fun games and progressively change into games which are more related to football. For the first time the children will be confronted with "real" games, called the "Small sided Games". Those games are the primary method of teaching children the fundamentals of the game and are the best learning environment to develop techniques and skills through the high frequency of ball contacts and football decision-making opportunities. In the 5 v 5 the children can develop to become technically effective

players with game intelligence, and without adult pressure and expectation that may hinder the child's learning process. The hypothesis argued in this paper is that grassroots level soccer boys can significantly increase the skill performance parameters and overall playing ability significantly by combining normal technical and tactical sessions with ladder training after small side games over a consecutive 12 weeks period. Therefore, the objective of this study was to investigate the changes in the parameters produced during 12 weeks of ladder training after small side games in 15 grassroots soccer boys.

Methods

Experimental Approach to the Problem

In order to address the hypothesis presented herein, we selected 30 grassroots soccer boys aged between 10 and 14 from Football club Kovai, Coimbatore.

The subjects were randomly assigned to two equal groups (n=15). Group- I underwent ladder training after small said games training group (LTWBDG) and group - II was acted as control group (CG). The ladder training after small said games was given to the experimental group for 3 days per week (Monday, Wednesday and Friday) for the period of twelve weeks. The control group was not given any sort of training except their routine work.

Design

Pre and post random group design was employed. The evaluated skill performance parameters were dribbling ability was assessed by Warner's Soccer test and the unit of measurement was in second, kicking ability was assessed by Warner's Soccer test the unit of measurement was in meters and overall playing ability were assessed by judges rating the unit of measurement was in score. The parameters were measured at baseline and after 12 weeks of ladder training after small side were examined.

Physical Characteristics of the Subjects

Subjects	Height (average)	Weight (average)	Age
Ladder training after small side games group and control group	149	48.3	11 to 14 years

Training programme

The training programme was lasted for 45 minutes for session in a day, 3 days in a week for a period of 12 weeks duration. These 45 minutes included 5 minutes warm up, ladder training for 15 minutes, 20 minutes small side games and 5 minutes warm down. Every three weeks of training 5% of intensity of load was increased from 65% to 80% of work load.

The volume of endurance training is prescribed based on the number of players and ground size. The equivalent in ladder training after small side games is the length of the time each action in total 3 day per weeks (Monday, Wednesday and Friday).

Statistical Analysis

The collected data before and after training period of 12 weeks on the selected variables due to the effect of ladder training after small side games was statistically analyzed with 't' test to find out the significant improvement between pre and post test. In all cases the criterion for statistical significance was set at 0.05 level of confidence. ($P < 0.05$)

Table 1: Computation of 't' ratio on selected skill performance parameters and overall playing ability of grassroots soccer boys on experimental group and control group (Scores in numbers)

Group	Variables	Mean	N	Std. Deviation	Std. Error Mean	T ratio
Experimental Group	DA	Pre test	16.55	15	0.67	3.12*
		Post test	16.38	15	0.59	
	KA	Pre test	16.15	15	0.85	4.14*
		Post test	17.33	15	1.04	
	OPA	Pre test	4.06	15	0.79	5.50*
		Post test	5.46	15	0.63	
Control group	DA	Pre test	16.58	15	0.68	1.23
		Post test	16.61	15	0.69	
	KA	Pre test	16.16	15	1.79	0.40
		Post test	16.15	15	0.85	
	OPA	Pre test	4.00	15	0.75	0.43
		Post test	3.93	15	0.96	

*significant level 0.05 level degree of freedom (2,14,1 and 14)

DA – Dribbling ability, KA – Kicking ability and OPA – Overall playing ability

Table I reveals the computation of mean, standard deviation and 't' ratio on selected skill performance parameters namely dribbling ability, kicking ability and overall playing ability of experimental group. The obtained 't' ratio on dribbling ability, kicking ability and overall playing ability were 3.12, 4.14 and 5.50 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were greater than the table value it was found to be statistically significant.

Further the table reveals the computation of mean, standard deviation and 't' ratio on selected skill performance parameters, namely dribbling ability, kicking ability and overall playing ability of control group. The obtained 't' ratio on dribbling ability, kicking ability and overall playing ability were 1.23, 0.40 and 0.43 respectively. The required table value was 2.14 for the degrees of freedom 1 and 14 at the 0.05 level of significance. Since the obtained 't' values were lesser than the table value it was found to be statistically not significant.

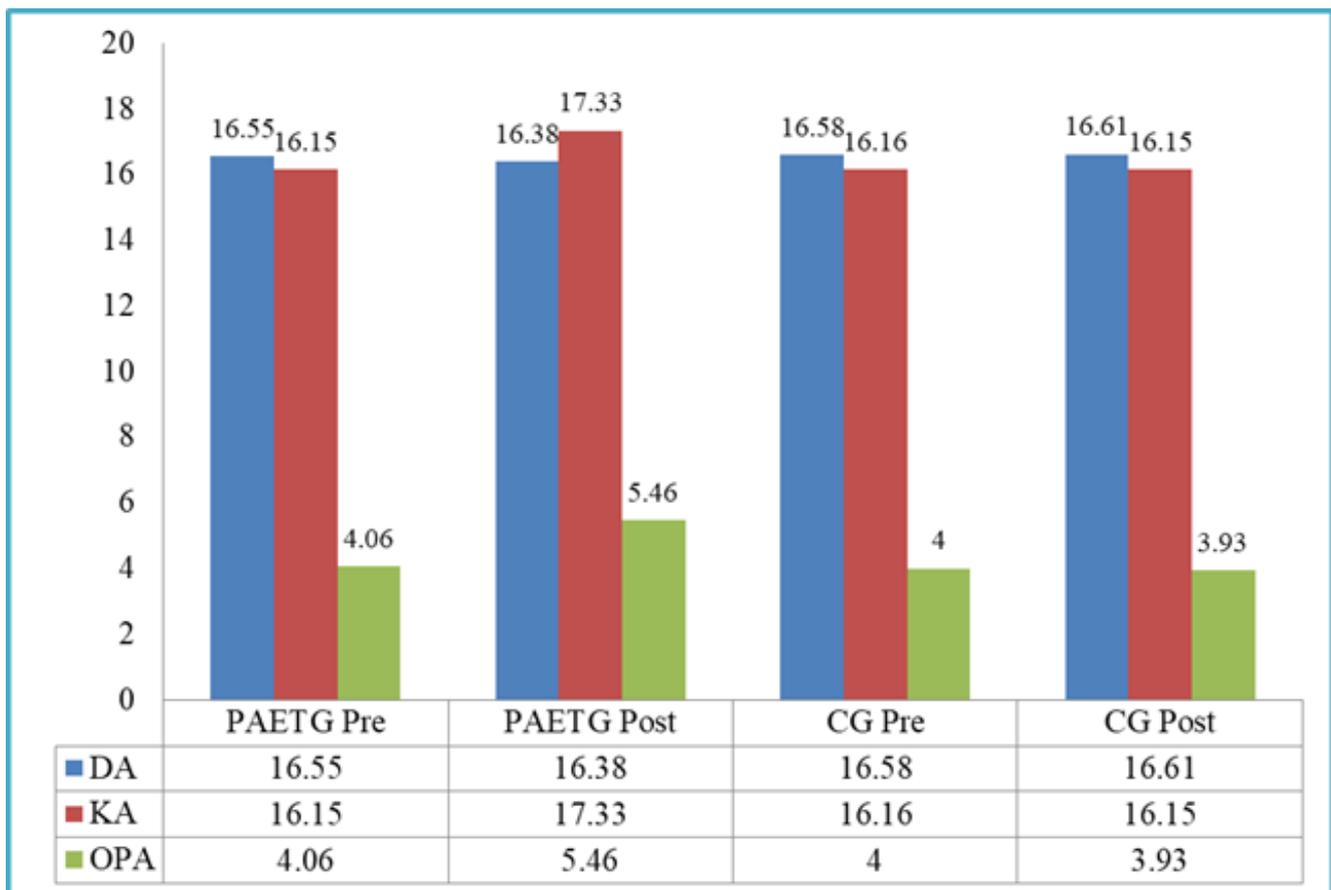


Fig 1: Bar diagram showing the mean value on selected skill performance parameters and overall playing ability of grassroots soccer boys on experimental group and control group (Scores in numbers)

Discussion and Findings

The present study experimented the impact of twelve weeks ladder training after small side games on the selected skill

performance variables and overall playing ability of grassroots soccer boys. The results of this study indicated that ladder training after small side games is more efficient to

bring out desirable changes over the dribbling ability, kicking ability and overall playing ability of grassroots soccer boys.

In the present study, ladder training after small side game improved dribbling ability and kicking ability by over 1.02% and 7.30% respectively by findings significant difference when comparison between baseline and post line.

The observed improvement in the overall playing ability by the influence of ladder training after small side game were 34.84% by findings significant difference in comparison between pre and post-test.

However, there were no statistically significant changes in dribbling ability, kicking ability and overall playing ability of control group.

The finding of the present study had similarity with the findings of the investigators referred in this study. The agility ladder represents a relatively inexpensive and easy to implement training tool, which allows coaches and players to be imaginative, manipulating task constraints during exercises and to develop the movement coordination patterns found in team sports (Gatz *et al.*, 2009) ^[15]. According to Sheppard and Young (2006) ^[16], within the leg muscle quality category, reactive strength would appear to have a decisive impact on performance during agility tasks. Recently, the kinematic variables of two agility ladder exercises (alternative lateral leg hopping and lateral footwork speed) have been analysed, with significant differences between both agility ladder exercises. Agility ladder training improved on speed, agility, straight dribbling and dribbling with change of the direction in youth soccer players (Alexis *et al.*, 2019) ^[17]. Haghighi *et al.* (2012) ^[8, 14, 18] reported that dribbling performance improves after 8 weeks plyometric training in soccer players.

It was found that at this age, in the training of juniors, it is advisable that physical training and technical-tactical training should have equal weight. Using complex exercises that also provide technical and tactical objectives, one can work with optimal performance to increase the degree of development of different motor skills (Monea *et al.*, 2017) ^[19].

Small side games started as an optimal task to optimize training time by fulfilling the broad range of fitness requirements without compromising skill performance and decision-making. Therefore, they are used extensively to improve physical fitness levels and also technical and tactical performance in a wide variety of soccer codes (Balsom 1999) ^[20]. Small side games training is typically completed in the form of "intervals" as opposed to continuous duration play, which is more typical of actual game play. However, we found only two studies that focused on the influence or additional benefits of interval or continuous Small side games training. In SSG the players experience similar situations that they encounter in competitive matches (Owen *et al.*, 2004) ^[24]. Due to this fact, game-based conditioning using SSG has become a popular method of developing specific aerobic fitness for soccer players (Impellizzeri *et al.*, 2006) ^[23]. Navarro (2008) ^[26] studied that the constraint to keep the ball in possession the most time as possible increase the ball contacts by players at the small-sided soccer game. At the same time, this instruction increase the short distances passes. Consequently, the number of technical events can be influenced by different task constraints and, for this reason, coach need to create specific goals task in order to increase the possibility to develop the technical components of players. Further, the planned programme ladder training after small said games might have influenced the dribbling ability, kicking ability and overall playing ability of the subjects involved in this study. The improvement over dribbling and

kicking may the direct cause for over all playing ability improvement.

Conclusions

1. It was concluded that 12 weeks of ladder training after small side games significantly improved the dribbling ability, kicking ability and overall playing ability of the grassroots soccer boys.
2. Ladder training after small side games is one among the most appropriate means to bring about the desirable changes over skill performance variables of football players. Hence, suggested that coaches and the experts deal with football players to incorporate ladder training after small side games as a component in their training programme.

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