32 - EVALUATION OF PHYSICAL CAPABILITIES IN SOCCER PLAYERS OF U-15- & U-17 CATEGORIES

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INTRODUCTION

Professional soccer has been improved and seeking greater results with their athletes, concerned to qualify their basic categories at a younger, when they reach the professional age are physically able to perform the required category. For physical preparation, these young athletes in are still the youth, several factors are important for the assessment and training to achieve successful performance, like: body composition, aerobic and anaerobic endurance, and anaerobic power. Given this set of variables, the study of body composition is one of the important elements to identify the profile of the soccer player (Fonseca, 2007). According with Mantovani (2008) high levels of body fat is associated with poor physical conditioning and income fall in most sports. Thus, it becomes important to check body composition, body fat percentage and body mass index (BMI), to detect and promote sporting talents. The duration of games and activities running at high speed, turns, changes of direction and other explosive movements performed in the match course, are activities that depend on aerobic and anaerobic sources for its execution. When it comes to aerobic endurance, this capability allows the athlete to play and recover quickly from anaerobic efforts (MANTOVANI et. Al., 2008), this evaluation has been performed by YoYo test, Luc Léger & Lambert (1982). The anaerobic fitness also has a mainly performance factor in these athletes. Assessments of anaerobic power in football are measured in different approaches (ASANO, et. Al. 2013). One of the most applied in various categories is the Running-based Anaerobic Sprint Test (RAST) (KEIR et. Al. 2013), which is intended to evaluate the generated power during peak speed. The strength and anaerobic power can be measured through muscle power actions, such as jumps and sprints, according to Pupo et al (2010), they are associated with most game actions, such as kicks, jumps and others. Thus it's necessary to enhance these capabilities to provide a better yield. According to PROESP (2008), the importance of the evaluation of the components of physical fitness and motor performance due to its important intervention in the performance of sports skills, among which we highlight the agility. When evaluating this capacity, the Square test is used to assess this ability. Based on the importance of these skills assessing, the aim of this study was to measure the physical valences in soccer players U-15 and U-17 in order to compare results to existing standards to define successful, and thus obtain subsidies for training, improved performance and promote the of sporting talent.

METHODOLOGY

Thirteen male athletes practicing soccer aged 16 ±(0.95) years from Under- 15 and Under-17 categories. The athletes were invited to participate in the study and signed an informed consent form (ICF). Were measured anthropometric variables: body mass(kg), height(m) and skinfolds(chest, mid axillary, supra iliac, abdominal, thigh, biceps, subscapular, triceps and calf). To estimate the body fat percentage was used equation of Slaughter et al (1988) applied for boys 6-17 years of age where : D = 0.735 (triceps + calf) +1.0. For measurement of skinfolds was used a) a scientific LANGE® caliper (Cambridge Scientific Industries Inc.), with 1 mm precision. The procedures for collection of skinfolds were performed according to the standardization proposed by Harrison et al (1988). The stature measure was used a stadiometer, 210 cm height with accuracy of 0.1 cm. Body weight was used a digital platform scale, brand, Filizola® calibrated and graduated with capacity up to 150 kg and 0,1 kg of precision. Measures of arm and leg the perimeter, was made by anthropometric tape 1 mm of precision. The body mass index(BMI) was calculated based on body weight and height, was determined by calculating the ratio between the measure of total body mass in kilograms by height in meters squared BMI = weight(kg) / height(m)2. The measurement was recorded to two decimal places. To evaluate the agility, square test was applied. The athletes have to perform movements and changes of direction in the shortest possible time, from one corner of the square and passing out of four cones, forming an X inside the square. Three trials were performed for each athlete randomly, where each had 3 minutes for rest. The better result was used to evaluate this test. To evaluate the lower limbs power, was used horizontal jump test, the athletes were instructed to jump as far as possible using arm impulse and landing with both feet, the range was measured by a measuring tape fixed into the ground. The jump range was recorded to the initial marking until the rearmost heel, in meters. Three attempts were made for each athlete randomly, where each had a measured period of about three minutes to recover between each trial was used to evaluate the largest range. The Yoyo test and RAST was the metabolic tests used: To speed rating was used RAST, each athlete performed six shot of 35 meters running, with 10 seconds intervals to each shot, after that were measured peak power, average power and fatigue ratio. RAST protocol was followed according to the procedures developed by Wolverhampton University, UK (ZAGATTO, BECK, 2009). To estimate maximal oxygen uptake was applied YOYO Test endurance II. The athletes have to travel a distance of 20m delimited by cones at a pace determined by beep divided into stages. The greatest distance traveled was used to calculate VO2 max. For statistical analysis were used mean and standard deviation. The software used was SPSS 10.0 and the level of significance was 0.05.

RESULTS AND DISCUSSION

The BMI results obtained in the study for soccer athletes (Table 1) are in accordance to references of adolescents with similar ages (PROESP, 2008). However, the study by Miranda et al (2012) our results show higher values and Daros et al (2008) study, approximate values. For the percentage of fat, found in a similar study of Miranda et al (2008), which was made an assessment on two occasions, both results also showed higher values than our study. Table 1 shows the anthropometric descriptive statistics.

Table 1: Mean and standard deviation (SD) of anthropometric variables.

Variables	Mean	SD
Age (years)	16,0	0,95
Stature (m)	1,72	0,09
Body weight (Kg)	61,7	9,4
IMC (kg/m^2)	20,6	2,3
Σ 9DC*	65,3	17,8
% FAT	12,7	3,8

*Sum of nine skinfold.

The Table 2 shows the descriptive statistics of the metabolic and neuromotor variables.

Table 2: Mean and standard deviation (SD) of metabolic and neuromotor variables.

Variables	Mean	SD
VO_2 (Kg/ml min)	46,4	4,7
Mean power	543,1	126,3
long jump (m)	2,12 (good)	0,15
Agility (seg.)	6,09	0,38

According to the tests of aerobic capacity, the values obtained are close to the study of Campeiz, Oliveira and Maia (2004), was higher than the Collares et al. (2013) study, lower than Moraes and Herdy (2008) and Karakoc et al (2012) studies. Lower values found in the literature to assess maximal oxygen consumption. On average power, the results found by the RAST test, showed lower values than those found in the literature for students who play soccer (KEIR et.al. 2013). Probably, the age difference has influenced due to the more advanced stage of maturity. In Barbieri et al (2012) study the values were similar for the same ages, with similar tests but, were conducted with futsal athletes. The results for horizontal jump are considered “very good” for the same age group in accordance with the standards for physical evaluation by PROESP (2008), and similar with study by Generosi et al (2007). The agility tests when compared to the study of Generosi et al (2007) show values slightly above, but compared to the standards for physical evaluation of the provision for individual sports with similar ages (PROESP, 2008), were considered reasonable. In relation to the results, the main focus of the study, we sought to evaluate the physiological conditions of athletes showed divergent in some capacity when compared with studies of similar groups. For evaluation of BMI, body fat percentage and muscle power with the long jump, the results were good compared to the literature, but in aerobic capacity and VO2 max aspect and average power, the results was quite low.

CONCLUSIONS

According to the values obtained we conclude that these athletes are at a lower level is for successful actions in this soccer. It is necessary to draw up a new strategy for a training plan to these athletes aiming to effort these capacities.

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EVALUATION OF PHYSICAL CAPABILITIES IN SOCCER PLAYERS OF U-15- & U-17 CATEGORIES

ABSTRACT

The Soccer is showing a concern for athletes from the basic categories, with intervening evaluative techniques used to identify variables relevant to the performance of athletes throughout their training. Factors such as aerobic capacity, anaerobic and anthropometric aspects are important to be evaluated in order to verify the fitness of these athletes. Thus, the intent of this study was to evaluate the physical valences in soccer players U-15 and U-17, from tests commonly applied to this sport. We evaluated 13 male adolescents, athletes practicing a particular football club, aged 16 ± (0.95) years. The results were different in some studies capabilities when compared with similar groups. For evaluation of BMI, body fat percentage and muscle power with the long jump, the results were good compared to the literature, but in the aspect of aerobic capacity and VO2 max and average power, the results show low values. According to the values obtained conclude that these athletes are at a lower level is necessary for successful actions in football for the category. It is essential and important, the development of a new strategic training plan for athletes aiming to work efficiently these factors.

KEYWORDS: Assessment, Physical capacities; Soccer.

EVALUATION DES CAPACITES PHYSIQUES DES ATHLÈTES DU FOOTBALL EN CATÉGORIES SUB-15 ET SUB-17

RÉSUMÉ

Football montre une préoccupation pour les athlètes des catégories de base, avec l'intervention des techniques d'évaluation utilisées pour identifier les variables pertinentes à la performance des athlètes tout au long de leur formation. Des facteurs tels que la capacité aérobie, anaérobie et anthropométriques aspects sont importants pour être évalué afin de vérifier l'aptitude de ces athlètes. Ainsi, l'objectif de cette étude était d'évaluer les valences physiques footballeurs U- 15 et U-17, à partir de tests couramment appliquées à ce sport. Nous avons évalué 13 adolescents de sexe masculin, les athlètes pratiquant un club de football particulier, âgés de 16 ± (0,95) ans. Les résultats étaient différents dans certaines capacités d'études en comparaison avec des groupes similaires. Pour l'évaluation de l'IMC, le pourcentage de graisse corporelle et de la force musculaire avec le saut en longueur, les résultats ont été bons par rapport à la littérature, mais dans l'aspect de la capacité aérobie et VO2 max et de puissance moyenne, les résultats montrent des valeurs basses. Selon les valeurs obtenues concluent que ces athlètes sont à un niveau inférieur est nécessaire pour les actions réussies dans le football pour la catégorie. Il est essentiel et important, l'élaboration d'un nouveau plan stratégique de formation pour les athlètes visant à travailler de manière efficace ces facteurs.

MOTS-CLÉS: évaluation; capacités physiques ; Football.

EVALUACIÓN DE LAS CAPACIDADES FÍSICAS DE ATLETAS DE FÚTBOL DE LAS CATEGORÍAS SUB - 15 Y SUB - 17

RESUMEN

Fútbol está mostrando una preocupación para los atletas de las categorías básicas, con intervenir técnicas de evaluación utilizados para identificar las variables relevantes para el rendimiento de los atletas lo largo de su formación. Factores tales como la capacidad aeróbica, anaeróbica y aspectos antropométricos son importantes para ser evaluados con el fin de verificar la idoneidad de estos atletas. Por lo tanto, el propósito de este estudio fue evaluar las valencias físicas en jugadores de fútbol U- 15 y U- 17, a partir de pruebas comúnmente aplicadas a este deporte. Se evaluaron 13 varones adolescentes, deportistas que practican un club de fútbol en particular, 16 ± (0,95) años de edad. Los resultados fueron diferentes en algunas capacidades de estudios en comparación con grupos similares. Para la evaluación del índice de masa corporal, porcentaje de grasa corporal y la fuerza muscular con el salto de longitud, los resultados fueron buenos en comparación con la literatura, pero en el aspecto de la capacidad aeróbica y el VO2 max y la potencia promedio, los resultados muestran valores bajos. De acuerdo a los valores obtenidos concluyen que estos atletas están en un nivel más bajo que es necesario para las acciones exitosas en el fútbol de la categoría. Es fundamental e importante, el desarrollo de un nuevo plan estratégico de capacitación para los atletas con el objetivo de trabajar de manera eficiente estos factores.

PALABRAS CLAVE: Evaluación, capacidades físicas, Fútbol.

AVALIAÇÃO DAS CAPACIDADES FÍSICAS DE ATLETAS DE FUTEBOL NAS CATEGORIAS SUB-15 E SUB-17

RESUMO

O futebol vem mostrando uma preocupação em relação aos atletas desde o as categorias de base, intervindo com técnicas avaliativas usadas para identificar variáveis relevantes ao desempenho de atletas ao longo de sua formação profissional. Fatores como capacidades aeróbias, anaeróbias e aspectos antropométricos, são importantes de serem avaliados no intuito de verificar o condicionamento físico desses atletas. Assim, a intenção desse estudo foi de avaliar as valências físicas em atletas de futebol sub-15 e sub-17, a partir de testes comumente aplicados a esse esporte. Foram avaliados 13 adolescentes do sexo masculino, atletas praticantes de Futebol de um determinado clube, com idades de 16 ± (0,95) anos. Os resultados se mostraram divergentes em algumas capacidades quando comparados com estudos de grupos semelhantes. Para avaliação de IMC, percentual de gordura corporal e potência muscular com o salto horizontal, os resultados obtidos foram bons comparados à literatura, porém no aspecto de capacidade aeróbia com o VO2 máximo e potência média, os resultados mostram valores baixos. De acordo com os valores obtidos concluímos que esses atletas se encontram num nível inferior do necessário para ações exitosas no futebol para a categoria. Faz-se essencial e importante, a elaboração de uma nova estratégia de plano de treinamento para os atletas, que vise trabalhar de forma eficiente esses fatores.

PALAVRAS-CHAVES: Avaliação; Capacidades físicas; Futebol