73 - ANTHROPOMETRIC PROFILE OF YOUNG SOCCER PLAYERS

MAÍSA SILVA
ANA FLÁVIA SANTOS SAMPAIO
NATÁLIA MAPA MENDES
RINALDO CARDOSO DOS SANTOS
MARIA LÚCIA PEDROSA
Universidade Federal de Ouro Preto – UFOP.
Ouro Preto – Minas Gerais, Brasil.
mlpedrosa@gmail.com

INTRODUCTION

Soccer is a sport with intermittent exercises of variable intensity. Approximately 88% of a soccer match involves aerobic activities and the remaining 12%, high intensity anaerobic activities (SANZ-RICO et al., 1998). Physical activity helps in the development of adolescents and in reducing risks of future diseases as well as exerting important psychosocial effects. Diet can define the performance of the athlete. It should be based on meeting energy needs, tissue repair and increasing muscle mass through adequate, balanced and varied intake of carbohydrates, fats, proteins, water, minerals and vitamins. Besides that the athlete's diet should be established according to individual needs, the frequency, intensity and duration of training (AMERICAN DIETETIC ASSOCIATION, 2000).

Anthropometry has proven to be an important tool for nutritional status assessment. Besides providing information about the physical measurements and body composition, it is a non-invasive, easy and rapid method (DE ONIS & HABICHT, 1996). It is important to stress that anthropometric measurements may also affect the sports performance. Several studies suggest that anthropometric measurements contribute to success in a particular sport (BARR, 1994; HOARE, 2000; FERNANDES et al., 2005 e BAYIOS et al., 2006). For Ramana et al. (2004), the study on anthropometric profile of athletes aims to define a morphological "ideal", specific to each sport. In addition, anthropometric measurements can be considered an additional strategy for monitoring / control of the training process.

The nutritional needs vary throughout life (REGO, 2003). During the development phase the nutritional requirements are high and adolescent athletes may show changes in eating habits that will lead future organic disorders. Nutritional and energy deficits may adversely affect either the process of growth and maturation (BEALS, 2001). The control of the training is crucial to a good physical performance and their monitoring should be conducted from the tables of classification. It is rare to find references to national physical parameters, such as: BMI of athletes, values of skinfold thickness and fat, among other parameters.

OBJECTIVE

The objective of the present study was to assess the anthropometric profile of 36 soccer athletes of a sports institution, with ages varying between 15 and 19 years.

METHODOLOGY

This study is characterized for its cross-design, with collection of primary data from 36 male footballers' participants in the championships held by the Soccer Federation of Minas Gerais in the categories Juvenile and Junior. The project was submitted to the Ethical Committee of Federal University of Ouro Preto and after approval of protocols, the tests were conducted at the headquarters of the club. Tests were conducted in the early pre-season.

We carried out the anthropometric survey, which aims to establish body composition, using measures of body weight, height, circumferences and skinfold thickness. The weight and body fat percentage were obtained by means of an electronic scale TANITA® (Ultimate Scale Model 2001WB) with capacity of up to 136kg and precision of 0.1kg. Height was determined by means of an aluminum vertical stadiometer of up to 213cm. From the ratio weight (kg)/square of height (m2) the Body Mass Index (BMI) was calculated. The standard for classification of BMI was by sex and age, according to WHO (2007) for, post - pubertal individuals aged 19 years.

Skinfolds were identified and marked always in the right hemibody of the subjects according to Frisancho (1993) and measured with a Cescorf® Scientific plicometer. Medium axial, triciptal and subescapular skinfolds were measured. The fat percentage was calculated by the skinfold equation of Thorland (1984) that estimates the composition of male athletes in two categories: juvenile (13-16 years) and junior (16-19 years). Each skinfold was measured three times in circuit form and the average of the three records was considered as the final value.

RESULTS

According to table 1 the athletes' BMI was (means + standard deviation) 22.7 + 1.8kg/m². Average height and weight were respectively 177.2 + 6.9cm and 71.3 + 8,7kg. Axial M, triciptal and subescapular skinfolds measured respectively 13.9 + 3.3mm²; 7.4 + 2.04mm²; 7.9 + 2.2mm². Fat percentage was 7.38%.

Table 1: Anthropometric data of footballers of categories juvenile and junior.

Variables	Mean	Standard deviation
Weight (Kg)	71.3	8.7
Height(cm)	177.2	6.9
BMI (kg/m²)	22.7	1.8
Axial M skinfold (mm^2)	13.9	3.3
Triceptal skinfold (mm^2)	7.4	2.04
Subescapular skinfold (mm^2)	7.9	2.2
Body fat (%)	7.38	2.73

DISCUSSION

It is important to conduct a periodic nutritional control in young athletes because their needs of energy and nutrients are high in order to support this period of physical growth, maturation and physical activity. In addition to possible changes in behavior, Bosi and Oliveira (2004) when assessed bulimic behavior in adolescent female runners, they observed the presence of a risky feeding behavior to install or even the presence of bulimia nervosa, although with low intensity in the rated segment. Therefore, professionals who work with this segment need to be secured in the correct classification and trained to identify the

feeding behavior of this group for effective management. The early detection and intervention are essential to maintaining not only the performance but the health of athletes.

Santos and Vasconcelos (2009) found that male Portuguese soccer players aged 14-16 years belonging to teams participating in the Youth National Championship had an insufficient daily caloric intake (2575 ± 470Kcal), and an unbalanced qualitative distribution of macro nutrients with emphasis on low-carb and high consumption of fat and protein. According to the measurements taken in the present study, we believe that this group is within the normal range for various parameters. However, for the classification of BMI, we observed that 6 athletes (16.7%) were classified as overweight or obese, the same profile was found by Santos and Vasconcelos (2009) who also worked with young footballers. This parameter is inadequate for classification of athletes, since physical activity increases lean body mass and therefore body weight. The high energy demands of training or competition and age groups, as some athletes have not gone through puberty, require players to consume a balanced diet. It is necessary to investigate the dietary intake of these athletes with further individualized nutrition guidance to correct possible dietary inadequacies with the goal of improving physical performance and quality of life.

Bubb (1992) presented reference values for body fat percentage of 5% to 13% for individual athletes and 12% to 18% for normal subjects considered healthy. The average percentage of body fat in our sample (7.38 ± 2.73%) according to the literature is within acceptable parameters for footballers. Other studies found in young soccer players, mean fat percentage from 11.4 to 11.9% (Ruiz et al., 2005), 10% (RICO SANZ, 1998a), 7.6% (RICO SANZ et al., 1998b) and 13.7% (Santos & Vasconcelos, 2009). The values found in these studies allow us to see the diversity of the samples regarding body composition. As stated by Santos (1999) football players need a certain amount of body fat to function as protection from shocks and falls.

The athletes were evaluated in the early pre-season. Several studies show that physical fitness and nutritional status are changed during the championship, significantly improving these values (Silva et al 2006 and BRAZ., 2007).

CONCLUSION

The anthropometric profile of the athletes is within the normality range for the various parameters analyzed.

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Universidade Federal de Ouro Preto,
Laboratório de Bioquímica Metabólica - ICEB - Campus Universitário, Morro do Cruzeiro,
CEP 35.4000-000. Ouro Preto - MG, Brasil.
E-mail: mlpedrosa@gmail.com

ANTHROPOMETRIC PROFILE OF YOUNG SOCCER PLAYERS
ABSTRACT

The aim of this study was to evaluate the anthropometric profile of 36 athletes participating in the sport of soccer a college sport, aged between 15 and 19 years. The analyzed parameters were Body Mass Index (BMI), height, weight and axial medium, triciptal and subescapular skinfold thickness. The results, presented as the mean + standard deviation, were respectively 22.7 + 1.8 kg/m²; 177.2 + 6.9 cm; 71.3 + 8.7 kg; 13.9 + 3.3 mm²; 7.4 + 2.04 mm²; 7.9 + 2.2mm². According to the values we consider the group to be within the normality range for the various parameters. Nevertheless, for the BMI classification, it was observed that 6 athletes (16.7%) were classified as overweight. This parameter is not suitable for athlete classification since physical activity practice increases the lean body mass and, consequently, the body weight. The high energy demands of training or competition and the studied age groups, as some athletes have not gone through puberty, require players to consume a balanced diet. It is necessary to investigate the dietary intake of these athletes with further individualized nutrition guidance to correct possible dietary inadequacies with the goal of improving physical performance and quality of life.

KEY WORDS: Young footballers; nutritional composition; anthropometry.

ÉVALUATION ANTROPOMÉTRIQUE DES FOOTBALLEURS DES CATÉGORIES JUVÉNILES ET JÚNIOR
RÉSUMÉ

L'objectif de cette étude a été l'évaluation antropométrique de 36 athlètes dans la modalité “football”. Ces athlètes, l'âge entre 15 et 19 ans, participent d´une association sportive. Les paramètres antropometriques analysés ont été l'Index de masse corporelle (IMC), la stature, le poids et les plis cutanée axiale moyenne, triciptal et subescapular. Les résultats présentent la moyenne + la déviation standard. de 22,7 + 1,8 kg/m²; 177,2 + 6,9 cm; 71,3 + 8,7 kg; 13,9 + 3,3 mm²; 7,4 + 2,04 mm²; 7,9 + 2,2mm² respectivement. Selon les mesures vérifiées nous avons considéré que le groupe est à l'intérieur de la bande de normalité pour plusieurs paramètres. Cependant, pour la classification d'IMC, il a été observé que 6 athlètes (16,7 %) ont été classifiés comme le surpoids ou l'obésité selon OMS (2007). Ce paramètre est inadéquat pour la classification des athlètes, parce que la pratique d'activité physiques augmente la masse mince et par conséquent le poids corporel. La haute demande d'énergie des formations ou des compétitions et la tranche d'âge étudiée, parce que quelques athlètes ne sont pas allés par la puberté, demandent que les footbaulleurs consomment un régime équilibré. Il devient nécessaire l'enquête de la consommation alimentaire de ces athlètes avec l'orientation nutritionnelle ultérieure individualisée pour corriger des inadéquations diététiques possibles avec le but de l'amélioration du performance physique et la qualité de vie.

MOTS-CLÉS: Jeunes footballeurs, composition nutritionnelle, antropometrie.

PERFIL ANTROPOMÉTRICO DE FUTBOLISTAS CATEGORÍAS JUVENIL Y JÚNIOR
RESUMEN

El objetivo de este estudio fue evaluar el perfil antropométrico de 36 atletas de fútbol de una agremiación deportiva, con edades comprendidas entre 15 y 19 años. Los parámetros antropométricos analizados fueron el Índice de Masa Corporal (IMC), la estatura, el peso y los pliegues cutáneos axial promedio, triciptal y subescapular. Los resultados mostraron una media ± desviación estándar de 22,7 + 1,8 kg / m²; 177,2 + 6,9 cm; 71,3 + 8,7 kg; 13,9 + 3,3 mm²; 7,4 + 2,04 mm²; 7,9 + 2,2mm² respectivamente. De acuerdo con las mediciones realizadas creemos que el grupo está dentro del rango normal para los diversos parámetros. Sin embargo, para la clasificación del IMC, se observó que seis atletas (16,7%) fueron clasificados como con sobrepeso u obesidad según la OMS (2007). Este parámetro es inadecuado para la clasificación de atletas, ya que la actividad física aumenta la masa corporal magra y por lo tanto el peso corporal. Las altas demandas de energía de entrenamientos o competencias y el grupo de edad estudiado, ya que algunos atletas no han pasado por la pubertad, requieren que los jugadores consumen una dieta equilibrada. Es necesario investigar la ingesta alimentar de estos atletas, con posterior orientación nutricional individualizado, para corregir posibles deficiencias de la dieta con el objetivo de mejorar el rendimiento físico y la calidad de vida.

PALABRAS CLAVE: jóvenes futbolistas, composición nutricional, antropometría

PERFIL ANTROPOMÉTRICO DE FUTEBOLISTAS DAS CATEGORIAS JUVENIL E JÚNIOR
RESUMO

O objetivo deste estudo foi avaliar o perfil antropométrico de 36 atletas na modalidade futebol participantes de uma agremiação esportiva, com idade entre 15 e 19 anos. Os parâmetros antropométricos analisados foram Índice de massa corporal (IMC), estatura, peso e pregas cutâneas axial média, triciptal e subescapular. . Os resultados apresentaram média + desvio padrão de 22,7 + 1,8 kg/m²; 177,2 + 6,9 cm; 71,3 + 8,7 kg; 13,9 + 3,3 mm²; 7,4 + 2,04 mm²; 7,9 + 2,2mm² respectivamente. Segundo as medidas aferidas consideramos que o grupo se encontra dentro da faixa de normalidade para os diversos parâmetros. Entretanto, para a classificação de IMC, observou-se que 6 atletas (16,7%) foram classificados como sobrepeso ou obesidade segundo a OMS (2007). Esse parâmetro é inadequado para classificação de atletas, visto que a prática de atividade física aumenta massa magra e conseqüentemente o peso corporal. A alta demanda energética dos treinamentos ou competições e a faixa etária estudada, visto que alguns atletas não passaram pela puberdade, requerem que os jogadores consumam uma dieta balanceada. Torna-se necessário a investigação do consumo alimentar desses atletas com posterior orientação nutricional individualizada para corrigir possíveis inadequações dietéticas com a finalidade da melhora no desempenho físico e qualidade de vida.

PALAVRAS CHAVE: jovens futebolistas, composição nutricional, antropometria