54 - MORPHOLOGICAL PROFILE BY VOLEYBALL SCHOOL ATHLETS IN PORTO VELHO CITY - RONDÔNIA

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INTRODUCTION

Volleyball is considered as the second sport in Brazil in popularity terms and characterized as a dynamic physical work and different intensity, where there are periods of physical exertion, alternating with periods of rest and yet , reveals itself as most complex arrangements, because it requires perfection in execution of physical skills and specific physical features. So, the fitness this sport must consider the optimization about some factors that when associated with another aspects , for example the tactical and technical, nutrition, psychology and physiotherapy (preventive) provide a high sportive performance .

Currently, the body composition is considered an important variable of health-related fitness, looking for a specific function by each component (muscle, bone, fat and viscera) for a human body operation, at rest and in motion.

Times ago, the insurance companies used the weight as an indicator of functional health. However, with the advancement of scientific studies, it was realized that the total body weight is a poor indicator of body composition because it doesn't reflect the distribution of components of person body weight. The total body weight is the amount of muscular, skeletial, organic and fat mass (KISS, 1987; SUVOROV & GRISHIN 1998; PITANGA, 2000; BIZZOCCHI, 2004; SILVA, 2004).

The study of body composition are useful in risk factors identification of disease in person associated with very high or very low body fat; in people potentiation contracting diseases associated with excess abdominal fat, estimates the effects of nutritional interventions and physical exercise programs on changes in body composition monitor changes in body composition associated with some diseases, growth, development, maturation and changes in body composition related to age (PITANGA, 2000).

Techniques for studying of body composition are used nowadays in researches with different segments of population, such children, adolescents, adults and seniors. The objectives of this studying can also be varied, as purpose, for example, to investigate the bone perimeter, diagnose the percentage of fat, check the body fat-free and compare it with the body fat mass; relating weight to height, compare the body parts or search them separately.

The most used in scientific research technic to determine the percentage of body fat are the anthropometric measurements of the skin folds and the use of specific equations, even more important in the growth and development of children and adolescents.

Usually girls present high increase of body fat around 10 / 11 years, followed by a decreasing but continuous increase up to 15 years. After this age occurs decrease to body until 18 years old.

The large increase between 10 and 12 years can be explained by the boom prepubertal female that begins at this time. The continuous increase until 15 years is a result of the pubertal process (KISS, 1987; SUVOROV & GRISHIN, 1998; PITANGA, 2000; CRISÓSTOMO, 2003; SILVA ET ALLI, 2003).

In this sense, regular vigorous physical activities may alter body composition, like, phisycal exercise associated with regulation in caloric ingestion will result in increased thin body mass and decreasing to percentage of body fat in children, adolescents and adults. So the point where the body composition can be changed depends on the duration and level of training. Changes in body composition are not necessarily permanents. In a proportion that activity levels decrease, the percentage of body fat increase, as demonstrated by Parizkoca (apud GALLAHUE & OZMUN, 2003) there is significant relationship between physical activity levels and the percentage of thin body mass.

In this sense to develop an sports program initiation must be known as adolescence aspects physiological measures, morphological and functional, thus being able to better use the athletic abilities of adolescents and don't just seeing them as a miniature adult. Claparede apud Weineck (1991) says that the child is not a miniature adult and their mentality is not only quantitative but also qualitative, different from adults, so that the child is not only smaller but also different (WEINECK, 1991). Its can be applied or do approaches to adolescent also in suitable proportions and observed their characteristics.

According by GALLAHUE &OZMUN (2003) the beginning of adolescence is marked by a period of accelerated growth both in weight and in height, and age, duration and intensity of this growth momentum is genetically based and will change considerably from individual to individual. They point out that the genotype of the individual growth potential, establishes the limits for individual growth. However, the phenotype of an individual, which are the environmental conditions, will have important influence on the extent of that growth potential. So the interaction of the genotype with the environment has considerable variability in the growth process. However, a definite period of accelerated growth occurs in late childhood, or early adolescence, before sexual maturation.

But as far as we investigated few studies have been found on the morphological athlete's volleyball variables (KISS, 1987; SUROV 7 GRISHIN 1998; PITANGA, 2000; CRISÓSTOMO, 2003; SILVA ET ALLI, 2003; BERRIEL, FONTOURA & FOPPA, 2004; BIZZOCCHI, 2004); being more reduced yet to those athletes juvenile category. In particular Rondônia doesn't found any publication about this subject, which justifies the present investigation.

Then, this study has as objective studying the morphologic profile of school athletes age between 12 and 14 years in Porto Velho City, Rondônia.

METHODS AND PROCEDURES

This is a quantitative research, but identifies itself as a case studying because as specific group in the school games, where the population consists in students athletes girls, volleyball players, participating of School Games of Rondônia (JOER) in 2004. The sample consists of 20 female volleyball players aged between 12 and 14 years. The morphological variables investigated and the procecures used respectively to obtain them were:

a) Age, interview with the athletes, height, measurement between the transverse planes that graze the vertex region and plant. Was used an electronic stadiometer scale FILIZOLA brand, model 31 manufactured by the industries FILIZOLA, consisting of a graduated scale with millimeter accurancy of 0.1 mm followed by the patterning described by PETROSKI (1999);

b) Weight, considering the resulting system of forces exerted by gravity on the total body mass. Was used an electronic scale by FILIZOLA, model 31, manufactured by FILIZOLA industries, with a capacity to 150 kg and an accuracy of 100g to do weight measure , follows the standardization described by PETROSKI (1999).

c) Mass Index Body was determined from a equation suggested by PITANGA (2000): BMI = weight / height² and;

d) The skinfold measurements were carried out following the standardization PETROSKI (1999): a) Skinfold triciptal-measured at the midpoint of the posterior arm, between the processes of the acromion and the scapular olecramo of ulna, along the center of the segment. The implementation of the measure was made with tests positioning on foot and erect attitude, head oriented in the Frankfurt plane with the arms relaxed and hanging along the body with palms facing the thighs, and the appraiser was over the athlet, did a skin fold, positioned the measuring instrument and proceeded to reading the measurement; b) Subscapular skinfold measuring two (2) inches below the inferior angle of the scapula obliquely to the center of the trunk. The implementation of this measure was taken with the athlet on foot and taking a erect head oriented in the Frankfurt plane with the arms relaxed and hanging along the body; and the appraiser was positioned behind the athlet, did the skinfold , positioned the measuring instrument and proceeded to read the measurement.

The determination of body fat percentage is given from the formula of Slaughter et al. (Apud PITANGA, 2000): % BF = 1.33 * (triceps + subscapular) - 0.013 (triceps + subscapular)² - 2.5, (KISS, 1987, CARNAVAL, 1998; PETROSKI, 1999; PITANGA, 2000). This formule is to girls from age 7 to 17, with skinfold belows 35mm, as the athlets in this study. Althought classification was about the table by Lohman (apud PITANGA, 2000), to children and adolescent girls.

RESULTS AND DISCUSSIONS

It was observed that there are similarities between the athletes, which can be confirmed from the observation of the scores of the standard diferences of age and height, and BMI values.

The mean weight (51.75) found in this study is lower than that observed by SILVA(2004) in Curitiba's influence on motor learning in the teaching-learning volleyball players of the same age in our sample, while the average height is very similar (Table 1)

Table 1: Average of morphological variables investigated in athletes of Porto Velho-RO

VARIABLE	$\bar{x}$	s
Age	13.40	0.82
Height	51.75	4.66
Stature	164.80	5.63
Body Mass Index	19.06	1.48
Percentage of fat	21.72	3.31

In terms of classification, considers that the volleyball players investigated in this study, considered to be outstanding athletes or elite of the State of Rondônia category in children and adolescents, have excellent body mass index (KISS, 1987, CARNAVAL, 1998; PETROSKI, 1999; PITANGA, 2000; NIEMAN, 2000). Note also that there was possibly on to compare the data of this variable with other studies because it is not found in the literature research with volleyball players of the same sex and age group that investigated in this study.

When analyzing the percentage of body fat observed normal mean scores in this variable, with only one component of the sample had a percentage of body fat above that category. It is so, then the low standard deviation a balance between the team. Expected that these data serve as a reference for future studies in terms of information for comparative studies, because for this study, as already highlighted, there are no specific studies to compare values, which also does not disqualify such a study, because it is based on theoretical and methodological sources and arguments recognized.

PREAMBLE

It is felt that the present study, the values corresponding to body mass index and body fat percentage to classify the students/volleyball athletes within the normal range recommended by the literature specific to the general populations.

REFERENCES

ARAÚJO, J. B. **Voleibol moderno**: sistema defensivo. Rio de Janeiro: grupo Palestra Sport, 1994.

BERRIEL, G. P.; FONTOURA, A.; FOPPA, G. Avaliação quantitativa de saltos verticais em atletas de voleibol masculino na superliga 2002/2003. **Revista Digital – Buenos Aires**, año 10, nº 73, jun de 2004.

BIZZOCCHI, C. C. **O voleibol no alto nível:** da iniciação a competição. 2ª ed. São Paulo: Manole, 2004.

CARNAVAL, P. E. **Medidas e avaliação em ciências do esporte.** Rio de Janeiro: Sprint, 1998.

CRISÓSTOMO, J. **Ensinando Voleibol.** 2ª ed. São Paulo: Phorte, 2003.

GALLAHUE, D. L. OZMUN, J, C. **Compreendendo o desenvolvimento motor: bebês, crianças, adolescentes e adultos.** São Paulo: 2ª Ed. Phorte Editora, 2003.

GHORAYEB, N.; BARROS NETO, T. L. **O exercício: preparação fisiológica, avaliação médica aspectos especiais e preventivos.** São Paulo: Atheneu, 1999.

KISS, Maria Augusta Peduti dal'Molin. **Avaliação em Educação Física: Aspectos Biológicos e educacionais.** São Paulo: Manole, 1987.

MATSUDO, V. K. R. **Testes em ciências do esporte.** 4ª ed. São Paulo: Centro de Estudos do Laboratório de Aptidão Física de São Caetano do Sul, 1987.

NIEMAN, D. C. **Exercício e saúde:** como se prevenir de doenças usando o exercício como seu medicamento. Tradução: Marcos Ikeda. São Paulo: Manole, 1999.

PETROSKI, É. L. **Antropometria: técnicas e padronizações.** Porto Alegre: Palloti, 1999.

PITANGA. F. J. G. **Teste, medidas e avaliação em educação física e esportes.** Salvador: UFBA, 2000.

SILVA, L. H. M. **A influência da aprendizagem motora no processo de ensino-aprendizagem do voleibol.** Curitiba (monografia de conclusão de curso): s.n., 2004.

SUVOROV, Y. P. & GRISHIN, O. N. **Voleibol iniciação**. 3ª ed. Rio de Janeiro: Sprint, 1998.

WEINECK, J. **Biologia do esporte.** São Paulo: Manole, 1991.

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MORPHOLOGICAL PROFILE BY VOLEYBALL SCHOOL ATHLETS IN PORTO VELHO CITY - RONDÔNIA

ABSTRACT

The purpose of this study was to evaluate the morphological volleyball athletes, female, age between 12 and 14 years, at the student representatives of Porto Velho city student participants of the games of Rondônia, in 2004. The sample consisted of 20 athletes, with the following characteristics: age (13.40 ± 0.82 years), weight (51.75 ± 4.66 kg) and height (164.80 ± 5.63 cm). Was evaluated the body mass index (19.06 ± 1.48) and fat percentage (21.72 ± 3.31). It was concluded that the values corresponding to body mass index and fat percentage were presented in an excellent colocation of athletes within the normal range recommended for general populations.

KEY WORDS: Volleyball, Body Mass Index, Percentage of fat.

PROFIL MORPHOLOGIQUE D'ATHLÈTES SCOLAIRES DE VOLLEY-BALL DE LA VILLE DE PORTO VELHO - RO

RÉSUMÉ

L'objectif de cette étude a été évaluer les variables morphologiques d'athlètes de volley-ball, du sexe féminin, dans la bande étaire de 12 et 14 années d'âge, à niveau estudiantin représentatifs de la Ville de Porto Velho participante des jeux estudantis de Rondônia, dans l'année de 2004. L'échantillon s'est composé de 20 athlètes, avec les suivantes caractéristiques: âge (13.40 ± 0.82 années), poids (51.75 ± 4.66 kg) et stature (164.80 ± 5.63 cm). Il s'est évalué l'indice de masse corporelle (19.06 ± 1.48) et le pourcentage de graisse (21.72 ± 3.31). Il s'est conclu que les valeurs correspondantes à l'Indice de Masse Corporelle et Pourcentage de Graisse se sont présentées dans un excellent placement des athlètes à l'intérieur des normes de normalité recommandées pour populations générales.

MOTS-CLEFS: Volley-ball, Indice de Masse Corporelle, Pourcentage de Graisse.

PERFIL MORFOLÓGICO ATHLETS DE VOLEYBALL POR LA ESCUELAS EN LA CIUDAD DE OPORTO VELHO - EXTRACTO DE RONDÔNIA

RESUMEN

El objetive diste estudio es evaluar las variables morfológicos del atletas voleibol, hembra, edad entre 12 y 14 años, representantes de los estudiantes de la ciudad de Porto Velho en los juegos de las escuelas de Rondônia, en 2004. La muestra consistió en 20 atletas, con las características siguientes: envejezca (13.40 ± 0.82 años), peso (51.75 ± 4.66 kilogramos) y la altura (164.80 ± 5.63 cm). Fue evaluado el índice de la masa corporal (19.06 ± 1.48) y el porcentaje gordura corporal (21.72 ± 3.31). La concluyó eso que los valores que correspondían al índice de masa corporal y al porcentaje gordura fueron presentados en una colocación excelente de las atletas dentro de la gama normal recomendada para las poblaciones en general.

PALABRAS-CLAVE: Voleibol, índice de masa corporal, porcentaje de grasa

PERFIL MORFOLÓGICO DE ATLETAS ESCOLARES DE VOLEIBOL DO MUNICÍPIO DE PORTO VELHO - RO

RESUMO

O objetivo deste estudo foi avaliar as variáveis morfológicas de atletas de voleibol, do sexo feminino, na faixa etária de 12 e 14 anos, em nível estudantil representantes do Município de Porto Velho participantes dos jogos estudantis de Rondônia, no ano de 2004. A amostra foi composta por 20 atletas, com as seguintes características: idade (13,40 ± 0,82 anos), peso (51,75 ± 4,66 kg) e estatura (164,80 ± 5,63 cm). Avaliou-se o índice de massa corporal (19,06 ± 1,48) e percentual de gordura (21,72 ± 3,31). Concluiu-se que os valores correspondentes ao Índice de Massa Corporal e Percentual de Gordura apresentaram-se numa excelente colocação das atletas dentro dos padrões de normalidade recomendados para populações gerais.

PALAVRAS CHAVE: Voleibol, Índice de Massa Corporal, Percentual de Gordura.

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