62 - ANTHROPOMETRY, CORPORAL COMPOSITION AND PHYSICAL TYPE OF YOUNG FEMININE PARAIBAN TEAM 2007 OF BASKETBALL

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Introduction

The cineanthropométrics pointers can be used like parameters for the success of an athlete (CARTER and HEATH, 1990; DUQUET and the CARTER, 1996). Even so the size and the adequate form of the body are not the only elements necessary athlete surpasses. (GUALDI-RUSSO and ZACCAGNI, 2001). But certainly it can be assumed that the morphologic characteristics of an athlete can have great influence in the level of sports performance.

Recent studies already had approached on the morphologic characteristics of basketball athlete (CARTER et al., 2005; GRANDSON and CESAR, 2005; BAYIOS et al., 2006; LEICHT, 2007) and in other sports (GUALDI-RUSSO e ZACCAGNI, 2001; QUEIROGA *et al.*, 2005; BAYIOS *et al.*, 2006; DUNCAN *et al.*, 2006; PRESTES *et al.*, 2006; RASCHKA e FROHLICH, 2006; BANDYOPADHYAY, 2007; GABBETT e GEORGIEFF, 2007), thus serving, as parameters for election and identification of athlete. In specify, the characteristics of the components of physical type can supply a synthetic picture of the anthropometrics characteristics of the high level athlete (GUALDI-RUSSO and ZACCAGNI, 2001).

The XV carried through American Pan Games in Brazil had disclosed how much it is important the incentive of the sports for the country. The sports teams of Brazil are formed by athlete of vary e regions of different colors even though. The cineanthropométrics parameters of the Brazilian teams serve of global form. In such a way it is globalization discloses athlete of some Brazilian states. However, it is arisen hypothesis that each Brazilian region inside has its proper morphologic characteristic of each sport. This leads to believe of the significance and representation that each state team as well as has for its identification and election of athlete serving of parameters for other regions.

For the necessity of if identifying to the cineanthropométrics parameters of the feminine paraiban team of basketball 2007, this study it has as objective: a) to identify the anthropometrics characteristics, index of corporal composition and physical type of the athletes of the paraiban team of infantile feminine basketball of 2007 and b) to compare the athletes for game position.

Materials and methods

The population of the study was composed for basketball athlete. The sample consisted of 15 integrant players of the feminine paraiban team youthful basketball. The players had been grouped in accordance with its game position, being, section (n=6), pivot (n=5) and shipowner (n=4).

Procedures for the data collection

All the measures had been carried through in the first semester of 2007, after authorization of the trainer of the paraiban team of basketball and signature of the parents of the term assent free and clarified (TCLE) for research with human beings of the Health department Resolution 196/96. The measures had included the corporal stature (EC) measured with one stature device (Dry 220, UK) next to 0,1 cm and the registered corporal mass with a portable scale (Dry alpha modelo770 UK) next to 0,1 kg. The measures of cutaneous folds had been carried through with a Langer compass (Cambridge, Maryland) in four places (tríceps, to subescapular, medial suprailíaca and of leg) next to 0,1 mm, the measures had been carried through in accordance with the technique of Heath and Carter (CARTER and HEATH, 1990).

The circumference of the arm (cm) was measured in contraction and of the leg (cm) it was measured with the citizen in foot. The widths of fêmur and úmero (cm) also had been measured with 0,1 approach of mm. All the measures had been carried through in a closed environment and the same hourly of the evaluation for the same evaluated. Moreover, all the measures had been carried through of the right side of the body that follow unified standards (ROSS and MALFELL-JONES, 1991) and in rest. They had been calculated the index of mass of body (IMC) and the relation enters the stature-mass in accordance with the procedures of literature; (Carter and Heath, 1990) IMC = MC/Est2, IP= Est/3MC; the addition of five cutaneous folds had been used (biceps, tríceps, to subescapular, suprailíaca and leg) for the calculation of the fat of the body; the addition of four cutaneous folds (biceps, tríceps, to subescapular and suprailiaco) was used for the calculation of the density of the body (DC) (DURNIN and WOMERSLEY, 1974); the equation of Siri (SIRI, 1956) it was used for the fat percentage (PG%); the power of the mass (PM), power of the stature (FOOT) and corporal area (AC) also had been calculated. Components of physical type (endomofo-mesomorfo-ectomorfo) had been calculated in accordance with the procedures of Heath and Carter (CARTER and HEATH, 1990).

Analytic Plan

All the values had been reported on average ± shunting line standard (dp) to calculate the significant differences in the averages were used Analyze of variance one way (ANOVA) with test post hoc of Bonferroni and multivaried analysis of variance (MANOVA) with Wilk `s Lambda was used to analyze possible differences between the components of somatotipo (CRESSIE et al., 1986).. The established statistical level of significance was $p<0.05$. The plotagem of somatotipo was by means of software 1,0 Somatotype Sweat Technologies 2000.

Results and Discussion

The anthropometrics characteristics, indices of corporal composition and physical type of the athletes of the feminine paraiban team of basketball for game position are reported in Table I. The shipowners had been leanest ($p<0.05$) and the pivots

had been weighed (p<0.05) between the three positions. The Pivots had been highest (p<0.05) that the shipowners and the sections, pivots and shipowners had been similar how much to the corporal stature. This explains that, the more the player has characteristics and functions of if approaching to the table, in such a way offensive how much defensive, but stature it presents. (NETO and CÉSAR, 2005).

When compared with the athletes of youthful basketball of the present study with athlete of high income of feminine basketball, the athletes of the game positions sections, pivot and shipowners had been lesser in the corporal stature in all the positions. Section (1.85±0.05 m) (CARTER et al., 2005), pivot (1.90±5.14 m) (CARTER et al., 2005) and shipowners (1.74±0.05 m) (CARTER et al., 2005). The lesser value of corporal stature can be explained by the level of athlete and of the etária band of the present study. Moreover, the athletes of high income had been part of the teamses top four of ranking final of the world-wide championship of basketball in Australia in 2004.

Significant differences between the three groups evaluated in the cutaneous folds had not been found. Significant differences in the perimeter of the arm between pivot and section (p<0.01) and between pivot and shipowner had been found (p<0.05). The athletes of the game position pivot had been the ones that had presented the biggest weight fat person (p<0.05), greater MCM (P<0.05) and the biggest values of IMC (P<0.05). The values of the IMC of the three evaluated groups of the present study are inside of the standards of the World-wide Organization of Health with 24,9 lesser values that kg/m2. The joined values of IMC of all the athletes (n=15) had practically been similar the studies found in international literature. (CARTER e HEATH, 1990; VIVIANI, 1994; ACKLAND *et al.*, 1997; BAYIOS *et al.*, 2006).

The athletes of the game positions section, pivot and shipowner had not presented significant differences how much to the percentage of fat, however the joined values of the players for position had been considered sufficiently raised, adopting itself as transport of cut 12 15%. The values of the athletes of the three positions had practically been similar the athlete Greeks of adult basketball (BAYIOS et al., 2006).

Table I - Anthropometrics characteristics and corporal composition of the athletes of the paraibana election of feminine youthful basketball of 2007.

Variables	All (n=15)	Section (n=6)	Pivot (n=5)	shipwner (n=4)	F	Bonferroni Test
Age (years)	15,6±1,2	15,8±1,3	15,6±1,5	15,3±0,9	0,2	
Mass (kg)	62,2±11,3	57,8±4,2	73,7±13,1	54,5±2,3	7,7	A vs. P*, P vs. AR*
Stature (cm)	166,8±6,7	165,9±5,8	172,6±4,4	160,8±4,6	6,1	P vs. AR*
Bíceps (mm)	9,3±2,7	7,9±1,4	11,2±2,6	9,1±3,5	2,3	
Tríceps (mm)	15,9±4,3	13,9±3,2	19,0±3,7	15,1±5,2	2,4	
Supraescapular (mm)	18,20±7,3	15,75±5,1	22,90±9,2	16,00±6,0	1,7	
Suprailiaca (mm)	19,3±7,5	16,7±4,1	25,8±9,1	15,3±4,2	4,1	
Leg (mm)	18,9±4,2	18,0±4,2	21,8±4,0	16,9±3,0	2,1	
EpicôndiloUmeral (mm)	6,1±0,4	6,0±0,4	6,4±0,3	5,9±0,1	3,8	
Epicôndilo Femural (mm)	9,4±0,5	9,2±0,4	9,7±0,6	9,2±0,2	2,7	
Perímeter of the arm (cm)	25,8±2,4	24,5±0,9	28,3±2,2	24,5±1,8	8,8	A vs. P**, P vs. AR*
Perímeter of the leg (cm)	35,3±3,1	34,4±2,0	37,3±4,2	34,1±2,0	1,9	
Ponderal index	42,3±1,3	42,9±1,0	41,3±1,3	42,4±1,4	2,3	
Fat mass percentual	22,1±3,7	20,6±2,3	25,0±3,7	20,7±3,8	3,1	
Fat weight stored	14,1±5,0	11,92±1,4	18,80±6,1	11,3±2,6	5,7	A vs. P*, P vs. AR*
MCM	48,2±6,8	45,9±3,9	54,9±7,2	43,2±1,4	7,4	A vs. P*, P vs. AR*
IMC	22,2±2,9	21,02±1,1	24,6±3,1	21,1±1,5	4,9	A vs. P*
4 folds (mm)	62,8±20,2	54,3±10,1	78,9±23,5	55,5±18,5	3,1	
Harness of the weight	5,8±0,4	5,6±0,2	6,2±0,5	5,5±0,1	8,5	A vs. P*, P vs. AR**
Harness of the stature	1,5±0,1	1,4±0,1	1,5±0,1	1,4±0,1	4,9	P vs. AR*
Corporal Área	1,7±0,2	1,6±0,1	1,9±0,2	1,6±0,0	8,9	A vs. P*, P vs. AR**
SAM	3,28±2,5	2,93±1,9	3,09±3,6	4,04±2,1	0,1	
SAD	1,47±1,0	1,33±0,7	1,50±1,6	1,63±1,0	0,1	

*P<0,05, **P<0,01. Em teste Bonferroni: A=Ala, P=Pivô, AR=Armadora

The values of the components of physical type of the athletes for position of game of basketball of the paraibana youthful team are reported in Table II.

Table II - Components of physical type of the feminine paraiban team of l basketball youthful of 2007

Variables	All	Section	Pivot	Shipwner	F	Bonferron Test
Endomorfia	5,01±1,22	4,65±0,82	5,98±1,44	4,35±0,82	3,2	
Mesomorfia	3,57±1,02	3,08±0,87	4,08±0,88	3,65±1,26	1,4	
Ectomorfia	2,39±0,89	2,83±0,75	1,78±0,77	2,47±0,97	2,3	
SAM	1,47±1,01	1,33±0,72	1,50±1,63	1,63±0,53	9,2	
SDM	3,28±2,5	2,9±2,0	3,1±3,6	4,0±2,1	7,9	

*P<0,05, **P<0,01. Bonferroni Test: A=Section, P=Pivot, AR=Shipner

The athletes of the game positions sections, shipowners and pivots significantly do not differ (F6,20= 2,023) with Wilks `ë= 0,387. In the analysis of the components of physcial type on the all the athletes of the feminine paraiban team of basketball, the endomorfia were dominant and the mesomorfia biggest that the ectomorfia, that is classified as endomorfo mesomorfico. (CARTER and HEATH, 1990). The joined values are had been bigger in all the components of somatotipo that athlete feminine adult Greeks (3.7-3.2-2.4) (BAYIOS et al., 2006).

The sections had had similar the endomorfia as predominant and mesomorfia and the ectomorfia, that is, classified as endomorfo balanced endomorfo. (CARTER and HEATH, 1990) the athletes of the game position pivot had had the dominant endomorfia and the mesomorfia biggest that the ectomorfia, that is, classified as endomorfo mesomorfico. (CARTER and HEATH, 1990) the athletes of the game positions shipowners had had the endomorfia as dominant and the mesomorfia biggest that the ectomorfia, that is, classified as endomorfo mesomorfico. (CARTER and HEATH, 1990) somatocarta of the athletes of the feminine paraiban team of Basketball is visualized in Figure 1.

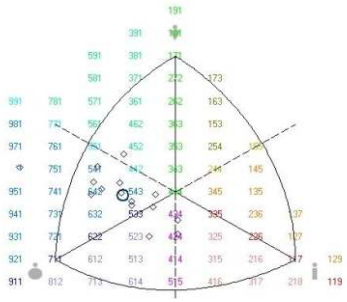


Figure 1 - "Somatocarta" of the feminine paraiban team of basketball (2007).

How much to the indices SAM and SDM who analyze the homogeneity, significant differences between the athletes of the game positions had not been found sections, pivot and shipowner in the present study. But in the analysis of the homogeneity indices the sections had been to the athletes most homogeneous, while the shipowners had been most heterogeneous. The components of somatotipo had also been different of values reported in literature with athlete of high income. Section (2.4-3.0-3.7) classified as ectomorfo mesomorfico, pivot (3.4-3.3-3.4) classified as central and the shipowners (2.6-3.9-2.9) classified as balanced mesomorfo (CARTER et al., 2005).

Conlusion

The study on the basis of the sample allowed concluding that the anthropometrics characteristics and index of corporal composition of the feminine paraiban team of basketball for position had been different in some anthropometrics variable. The athletes had presented levels of percentage of fat sufficiently raised having as point of cut of 12 15%. How much to the components of physical type to the athletes for game position they had not presented significant differences. Physical type of all the athletes was classified as endomorfo mesomorfico.

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ANTHROPOMETRY, CORPORAL COMPOSITION AND PHYSICAL TYPE OF YOUNG FEMININE PARAIBAN TEAM 2007 OF BASKETBALL

ABSTRACT

This study it has as objective to compare the anthropometrics characteristics, corporal composition and somatotipo of the athletes of the feminine youthful paraibana election of 2007 and for position of game. Materials and methods: 15 pertaining feminine athletes to the paraibana election of basketball was evaluate for method anthropometric. In the analysis of the components of somatotipo multivaried analysis of variance was used (MANOVA). The established level of significance was p< 0,05. Results. The components of somatotipo of the sections, pivots and shipowners had not presented significant differences F6,20= 2,023) with Wilks `ë= 0,387. The sections had been classified as endomorfo balanced (2.4-3.0-3.7), the pivots had been classified as endomorfo mesomorfico (3.4-3.3-3.4) and the shipowners as endomorfo mesomorfico (2.6-3.9-2.9). Conclusion. The Somatotipo of all the athletes was characterized as endomorfo mesomorfico.

KEY-WORD: Anthropometry; basketball; body composition; somatotype.

ANTHROPOMÉTRIE, COMPOSITION CORPORELLE ET SOMATOTIPO DE L'ÉLECTION PARAIBANA DE BASKET-BALL INFANTO JUVÉNILE FÉMININ DE 2007

RÉSUMÉ

Cette étude il a comme objectif comparer les caractéristiques anthropométriques, la composition corporelle et la somatotipo des athlètes de l'élection paraibana juvénile féminine de 2007 et par de position de jeu. Matériels et méthodes : 15 athlètes féminins appartenant à l'élection paraibana de basket-ball ont été évalués par méthode anthropométrique. Dans l'analyse des composantes de la somatotipo a été utilisée analyse multivariada de variance (MANOVA). Le niveau d'importance établi a été p<0,05. Résultats. Les composantes de la somatotipo des sections, pivots et armateurs n'ont pas présenté de différences significatives (F6,20= 2.023) avec Wilks `ë= 0.387. Les sections ont été classées mange endomorfo balancée (2.4-3.0-3.7), les pivots ont été classés mange endomorfo mesomorfico (3.4-3.3-3.4) et les armateurs je mange endomorfo mesomorfico (2.6-3.9-2.9). Conclusion. Le Somatotipo de toutes les athlètes a été caractérisé mange endomorfo mesomorfico.

MOTS CLÉ: Anthropométrie ; basket-ball ; composition corporelle ; somatotipo

ANTROPOMETRÍA, COMPOSITION CORPORAL Y SOMATOTIPO DE LA ELECCIÓN PARAIBANA DEL BALONCESTO JOVEN FEMENINO INFANTO DE 2007

RESUMEN

Este estudio que tiene como objetivo para comparar las características de los antropométricas, composición y somatotipo corporales de los atletas de la elección joven femenina del paraibana de 2007 y para la posición del juego. Materiales y métodos: método del antropométrico habían evaluado a 15 atletas femeninos que pertenecían a la elección del paraibana del baloncesto. En el análisis de los componentes del somatotipo multivaried el análisis de la variación fue utilizado (MANOVA). El nivel establecido de la significación era p<0,05. Resultados. Los componentes del somatotipo de las secciones, de los pivotes y de los navieros no habían presentado las diferencias significativas (F6,20= 2.023) con el ë= 0.387 del `de Wilks. Las secciones habían sido clasificadas como endomorfo balanceado (2.4-3.0-3.7), los pivotes habían sido clasificados como el mesomorfico del endomorfo (3.4-3.3-3.4) y los navieros como mesomorfico del endomorfo (2.6-3.9-2.9). Conclusión. El Somatotipo de todos los atletas fue caracterizado como mesomorfico del endomorfo.

PALABRAS-LLAVE: Antropometría; baloncesto; composición corporal; somatotipo

ANTROPOMETRIA, COMPOSIÇÃO CORPORAL E SOMATOTIPO DA SELEÇÃO PARAIBANA DE BASQUETEBOL INFANTO JUVENIL FEMININA DE 2007

RESUMO

Este estudo tem como objetivo comparar as características antropométricas, composição corporal e somatotipo das atletas da seleção paraibana juvenil feminina de 2007 e por posição de jogo. Materiais e métodos: 15 atletas femininas pertencentes à seleção paraibana de basquetebol foram avaliadas por método antropométrico. Na análise dos componentes do somatotipo foi utilizado análise multivariada de variância (MANOVA). O nível de significância estabelecido foi p<0,05. Resultados. Os componentes do somatotipo das alas, pivôs e armadoras não apresentaram diferenças significativas ($F_{6,20}$= 2,023) com Wilks` ë= 0,387. As alas foram classificadas como endomorfo balanceado (2.4-3.0-3.7), as pivôs foram classificadas como endomorfo mesomorfico (3.4-3.3-3.4) e as armadoras como endomorfo mesomorfico (2.6-3.9-2.9). Conclusão. O Somatotipo de todas as atletas foi caracterizado como endomorfo mesomorfico.

PALAVRAS-CHAVE: Antropométria; basquetebol; composição corporal; somatotipo.