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STRUCTURE OF MORPHOLOGICAL CHARACTERISTICS OF YOUNG BASKETBALL PLAYERS

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Abstract
This research has explored the factor of structure for some morphological variables sof the young basketball players. The experiment was done on a sample of 54 young basketball players aged 17 years. Latent factors were extracted which is used factorial analysis and have won two latent factors whose morphological has been appointed: general factor for growth and development, as well as factor transversal body. Conclusions reached in this paper that the factorial structure defined space important factors in the morphological characteristics to young basketball players.

Key words: morphological characteristics, young basketball players, factor analysis.

Introduction

Basketball is a team sport game requiring an extremely pronounced body height and certain other external geometrical body dimensions (Erčulj, F. 1996). The longitudinal dimensions chiefly influence the efficiency of some specific basketball movements with a pronounced vertical component (rebound, different shots at the basket, passes, blocking of shots, jump at the jump ball etc.) (Erčulj & Bračič, 2010). Anthropometric characteristics, such as body fat, skinfold thickness, body height, arm span, and body circumferences, were determined to be principal components in elite basketball players; therefore, they are often regarded as indicators of the level of play (Vaquera, A.; et al…2015).

The study indicates that anthropometric assessment of body build, as well as somatotype analysis, may be key factors in the process of talent identification in basketball. It should be highlighted that the selection for basketball and specifically for playing positions should include the analysis of somatic build features such as body height and mass, shoulder breadth, flexed arm girth and arm span (Gryko, K. et al.. 2018).

According to specialists, basketball is a dynamic team sport and, therefore, the determination of body build profiles may become a key factor in assessing players' capabilities in regard to their fitness levels and efficiency during performance.

Morphological performance and motor skills are very important components in the development of the game of basketball. Therefore basketball players required by professional goal setting work structures important for the development of anthropological status.(Trninić, S. 1996; Vasiljev, R. et al…2003; Trninić, S. et al…2010; Trninić, M. et al…2012; Kryeziu, A.2013). The purpose of the paper-experiment is the structure of morphological characteristics to young basketball players.

Methods

In the survey included 54 junior basketball league age 17 years. The players are members of two basketball schools, Drita from Gjilan and Sigal Pristina from Pristina, they are involved in basketball training program, approximately 2 years, exercised 3 times a week as well as 1 hour and 15 minutes per day.

The sample of variables
In this paper are applied variables, five are from morphological space. The variables: Morphological variables: BOWE - Body weight; BOHE - Body height; ARCI - Arm circumference; CHCI – chest circumference; THCI - thigh circumference. Measuring instruments are applied by: Trninić, S.1996; Jeličić, M., Sekulić, D., & Marinović, M. 2002. Data were processed with SPSS statistical software programme package version 21.0 for Windows, research latent structure of space that will be explored through factor analysis.

Results

Issues on which to resolve through factorial analysis which aims to the large number of variables related manifestos between them reduce them to a small number of independent latent variables, which may explain the relationship them between manifest variables analyzed.

Table no. 1 The main characteristic roots and parts explained common variance in morphological space.

Component	Total % of	Variance	Cumulative %
1	2.267	45.336	45.336
2	1.136	22.722	68.058
3	.707	14.146	82.204
4	.542	10.832	93.036
5	5 .348	6.964	100.000

Decrease main morphological characteristic of latent variables in table. 1 are shown the characteristic roots (Lambada) and partial contribution (%) and their cumulatively explaining the variability in general. According to method Hottelingut and Criterion CG (Gutman-Kaiser), two main components are extracted, which explain 68.05% of variance genera. The first characteristic root of the variance explained 45.33% of the overall system, the second cure the root of the variance explained 22.72% of genera.

Table no. 2 Matrix components and communalities.

	1	2
BOWE	. 690	.213
BOHE	.788	-.152
ARCI	.806	.263
CHCI	.720	-.354
THCI	.209	.935

In table no. 2 projections have realized significant body weight, body height, arm circumference and chest circumference of the coefficient of .690 to .806. In the second component, thigh circumference is defined with high coefficient of .935.

Table no. 3 Matrix of parallel projections.

	1	2
BOWE	. 304	-.134
BOHE	.348	.188
ARCI	.356	.231
CHCI	.318	-.311
THCI	-.010	.823

Oblim first factor is defined by body weight, body height, arm circumference and chest circumference coefficient of .304 to .356. On the basis of such projections first factor can be interpreted as a general factor for growth and development. In the second factor is designed thigh circumference with high coefficient of .823. The second factor can be defined as transverse body factor.

Table no. 4 Matrix of correlation between morphological factors.

Component	1	2
1	1.000	0 .000
2	0.000	1.000

Under inter correlation matrix of latent factors (tab. 4) the first factor to the second factor does not have significant correlations (.000). Based on this we can conclude that the factors are independent of each other.

Discussion

Basketball is a team sport involving several types of players who differ in terms of body height and other morphological dimensions which have both strong indirect and direct influences on athletes' performance (Erculj F, Bracic M.(2014). Among a few factors (players abilities), which make influence on success in basketball, anthropometric characteristics are very important. Anthropometric characteristics of athletes determine the success in particular sport events in various ways. The knowledge of these characteristics is necessary to establish their importance for the competitive success. The research on the influence of these characteristics in sports and games is of particular complexity, because the success in the game depends, among other things, on how the individual characteristics of some players fit into the whole, thus creating a coherent team (Nageswaran AS. 2013). Regarding the muscle body component, our basketball players from different age groups were homogeneous and had excellent amount of muscle mass, about 52 % (from 50.29% in group up to 12 to 53.7% in group up to 18 years old). The biggest absolute muscle mass, expressed in kg, was registered in the group up to 18 years old (37.14 kg) (Mackovic S, Pojskic H, Uzicanin E.2012; Lj. Efremovska et al...2014). In the examined age span (10 -18 years), with increasing of the age, significant increase of all absolute body components (muscle, bone, fat) was registered. The biggest increase from the absolute value was measured in the muscle mass, followed by the bone component that could be considered as anthropometric indicators of active growing process. Regarding morphological characteristics in adolescence, it is sometimes difficult to separate the effects of biological growth from those of training (e.g. in muscle tissue percentage) (Lj. Efremovska et al...2014).

Conclusion

Based on the goals outlined in this paper can conclude that latent factors were extracted, which is used factorial analysis and have won two latent morphological factors who was appointed as: General factor for growth and development; Factor transverse body. To conclude, data on the structure of morphological characteristics of junior male basketball players of this age are clearly very important for both basketball theory and practice. They enable the generation of model values which can greatly assist basketball coaches when selecting different types of young male basketball players

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