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THE IMPACT OF MORPHOLOGICAL AND BASIC MOTOR DIMENSIONS ON PERFORMING THE SITUATIONAL-MOTOR DUTY IN HANDBALL

1. Introduction

Numerous problems which belong to kinesiology are in common with other problems of the anthropology science - biology, bio-mechanics, physiology, sociology, anthropology and pedagogy. Although these problems are not unique with kinesiology but also to the other fields of the aforementioned areas, considering the kinesiology, they are of particular importance for the reason because they are a foundation of the practical application of kinesiology and its knowledge on education plan, recreation, sports and kinesis-therapy.

Orientation and determination of youth to the sport of handball is conditioned by his desire for this young man's sport or through selection by an expert game of handball taking into account the morphological characteristics of the sport, psychomotor and cognitive skills and speed of learning and improvement of technical and tactical elements (Fulgozi, 1994). Selection, despite the choice which is to be made, means the orientation and perfection of the handball players' talent and potential peak (Paranosic and Savic, 1977). This is a long and complex process which requires teamwork and a multidisciplinary approach.

Handball according to their characteristics belongs to multi-structural and complex movements, and it is considered among the categories of attractive sports. Success in all sports, handball and it also depends on many factors related to each other between them such as: motor skills, cognitive skills, cognitive features, structure, motivation, philosophical-functional characteristics, dynamics micro social district, technical and tactical elements of the game, and morphological structure of the player. All these intertwined in common structure responsible for better outcome in the game of handball. In this context, it is possible to determine the role of the dimensions and morphological-motor skills and subsystem of the handball game (as system), and as a component of the program transformation process (Demir, 1998). Management of these processes is possible as there are constantly working relationship between each subsystem (Gabrielići, 1977). Once the topic of this paper is the influence of some morphological and motor parameters in the execution of the task-specific motor is to be expected that the reserve will be obtained.

2. The Research Goal

The goal of this investigation is to certify the level of anthropometric, motor and predictive variable (independent) features impact on execution of the situation-motor and variable criteria test.

3. Material and the Identity

3.1. Sample of the Entity

The research method has included the sample of 60 handball players' teenagers between 17 and 18 of Handball Club Drita from Gjilan. In order to include the handball player in this investigation it was a precondition for them to be active in handball for at least two years and to have taken part in trainings at least three times a week.

3.2. Variable Samples

3.2.1. Variable anthropometric-predictive sample

In order to evaluate the anthropometric dimensions in this research the following variables have been included.

ABOWE.....Body weight

ABOHE.....Body height

APALE.....Palm length

APAWI.....Palm width

3.2.2. Motor-predictive variable sample

In order to evaluate the motor abilities in this research the following tests have been introduced:

MLLFS..... .Leap length from the spot

MLHFS.....Leap height from the spot

MTHMB.....Throwing of the medical ball (2kg) from a distance with one hand

MRU50M.....50 meters running from the low start

MRU400M.....400 meters running

3.2.3. Motor variable sample as a criterion

A criterion variable in this research is presented by the situation-motor test;

MTHB1M.....Throwing of the ball with break from the 6 meter distance in the square 1x1 meter in one minute.

For any anthropometric, motor situational-motor variable the following values have been calculated:

1. Central and dispersive parameters:

- Minimal value (min)
- Maximal value (max)
- Arithmetic average (mean)
- Standard deviation (Std. Dev.)
- Asymmetry (skew ness)
- Grade of leaning (kurtosis)

2. In order to connect the predictive and criteria results among themselves the regressive analysis has been applied.

4. Results of the Discussion

In table one, basic statistical parameters of anthropometric of the motor and motor situational tests of sportsmen and sportswomen variables have been presented, in fact the junior handball players of HC Drita, where the arithmetic average values have been presented, the minimal and maximal results, standard deviation, spreading or asymmetry parameters and the level of bow stretching of the results distribution (kurtosis).

The obtained results from the statistical point of view show that anthropometric, motor and situation-motor variables of the handball players don't have a significant statistical deviation from the normal distribution. Results of all anthropometric and motor variables are positive asymmetric, concentrated on the zone of the low results.

Table 1. The statistical descriptive parameters of the anthropometric motor and situation-motor variables with the handball players.

	N	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
ABOWE	60	52.30	98.26	70.9148	8.6892	.635	.959
ABOHE	60	162.00	188.00	173.8167	6.2096	.167	-.650
APALE	60	17.50	23.00	19.8167	1.1423	.373	.326
APAWI	60	19.00	24.50	22.4500	1.2977	.735	.066
MLLFS	60	149.00	248.00	202.1000	22.3043	.083	-.555
MLHFS	60	36.00	74.00	44.7500	9.2363	.410	1.815
MTHMB	60	14.10	22.41	18.0023	2.1470	.205	-.704
MRU50M	60	6.32	8.09	7.5840	.7225	.309	-.668
MRU400M	60	66.95	98.35	81.8447	7.3193	.139	-.842
MTHB1M	60	28	41	38.0138	2.8680	-.785	-.268

Based on handball regressive survey, the value of connection between the variable independent predictive (variable anthropometric) and variable criteria dependent – situational motor test (throwing of the ball with interruption from a 6 meters distance group into the square 1x1 m in one minute) has been certified.

The entire variable independent predictive (variable anthropometric and motor) and variable criteria dependent – situational motor test (throwing of the ball with interruption from a 6 meters distance group into the square 1x1 m in one minute) system, in fact correlation multiple coefficient has the value $R = 0.678$, which explains the common variability between the system and variable criteria around 40 % ($R^2 = 0.460$).

As the F distribution has come out as a result of the Hertz distribution of both variables, it was necessary to appoint the two levels of the freedom. The first level of freedom is equal to the number of predictive variables ($df = n$) and the second one is completed in that way by decreasing the number of subjects in proportion with the number of predictive variables 1 ($df = N - n - 1$). It is important to emphasize that the F-test is equal to (4.736) if the multiple correlation is bigger, in the real case of this work is significant to ($Sig = 0.00$). As the correlation multiple (R) is valid, we have found that only one coefficient from Beta is valid (Table 2).

Table 2. Multiple correlation and partial-regressive connecting coefficients of predictive and criteria variables (MTHB1M.)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.678	.460	.363	2.2889

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	223.333	9	24.815	4.736	.000
	Residual	261.965	50	5.239		
	Total	485.297	59			

Coefficients

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)	72.240	11.092		6.513	.000
	ABOWE	-.004	.043	-.013	-.100	.921
	ABOHE	-.060	.072	-.131	-.835	.408
	APALE	-.561	.354	-.224	-1.586	.119
	APAWI	-.048	.303	-.022	-.159	.874
	MLLFS	-.066	.014	-.517	-4.679	.000
	MLHFS	.008	.036	.028	.245	.808
	MTHMB	.122	.150	.092	.815	.419
	MRU50M	.398	.473	.100	.843	.403
	MRU400M	-.051	.045	-.131	-1.134	.262

Upon execution of the situational-motor ((throwing of the ball with interruption from a 6 meters distance group into the square 1x1 m in one minute), based on anthropometric features there is no important statistical impact none of the variables. Based on the motor tests as predictive parameters on execution of the criteria variables, it is only the test distance leap from the spot having an important statistical impact. Explosive force of the lower extremities shown with a maximal leg muscle contracting during the detachment has an impact on body stability when throwing the ball towards the goal. Such an impact may be explained based on the reason that lower extremities muscle explosive force is in correlation with the muscle upper extremities explosive force.

5. Conclusion

In order to determine the relation and level of the impact of some anthropometric features and motor abilities on situational-motor test execution in the handball game, the test results taken from 60 handball players aged 17 to 18 years old from

Handball Club Drita from Gjilan. In terms of morphological space four anthropometric variables have been applied, and in the motor ability space five tests and one test in motor situation have been applied. Based on the data of basic statistical parameters, it may be said that the applied variables have no deviation from the normal distribution and they may be applied for other research purposes of anthropological character. The regressive analysis shows an important statistical correlation among the criteria and predictive variables.

Test results of this research suggest the conclusion of this success, and in the success of this variable execution criteria (motor – situational) where the handball game results depends on it, an important role plays the intensity exciting mechanism, responsible for variability of explosive force dimensions.

6. Literature

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The research has been made in order to certify the level of anthropometric and motor features impact as predictive (independent) variables on completion of situational-motor test as criteria (dependent) variable.

This research has included the sample of 60 young handball players aged 17 and 18 of Handball Club Drita from Gjilan. The variables sample was composed of a group of ten tests; four anthropometric variables and five motor tests as predictive variables and one situational-motor test as a criteria variable. For each anthropometric, motor and situational-motor variable central dispersive and statistical parameters have been considered.

In order to evaluate their predicative results and criteria connection the regressive analysis has been applied. Correlation results of criteria variable and anthropometric and motor (predictive) system variable; it shows that there is an important statistucak connection between criteria variable (throwing of the ball with interruption from a 6 meters distance group into the square 1x1 m in one minute) and the predictive system. Out of four anthropometrical variables and five motor tests, only the motor variable – long leap from the spot – MLLFS. (Beta) = 0.517 is important to $P = 0.000$ level.

Key words: handball, morphological dimensions, situational-motor skills.