

**Relations between Some Anthropometric Characteristics and the Variable for Assess Situation-Motoric Knowledge Smash from the Zone 4 for the Women Volleyball Players in the Age of 14-18 in Republic of Macedonia in the Season 2009/10**

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**Abstract**

The research was made on a sample of 151 female volleyball players in the age of 14-18 in Macedonia, which represents the population of players competing in state championships for the young categories in season 2009/10. The study applied 1 variable to assessment situation-motor knowledge and 18 variables for the assessment of the anthropometric characteristics. In order to determine the relationship between anthropometrical characteristics and variables for assessment of the situation-motor knowledge linear regression analysis is applied, where the criteria for assessment situation-motor knowledge is the variable smash from the zone 4 and predictors are the anthropometrical variables. Based on the obtained results it can be determined that the predictor system of anthropometrical variables has statistically significant relationships on variable for assessment of the situation-motor knowledge.

**Key Words:** situation-motor knowledge, anthropometric characteristics, smash, regressive analysis

## 1. Introduction

Anthropometrical characteristics were the subject of exploration in many labors. These characteristics have great significance in the game of volleyball matches.

The dimensions that define the anthropometrical characteristics as well as the studies on their relations with the situational-motor knowledge are a problem of vital signification for the possibility of forming the rational procedure for the optimal orientation, selection and effective monitoring of development of sports mastery.

The subjects of our research are anthropometrical characteristics and situation-motor knowledge of the female volleyball players in the age of 14-18 in Republic of Macedonia.

## 2. Methods

The research was made on a sample of 151 female volleyball players in the age of 14-18 in Macedonia, from different cities of the following clubs: VC "Rabotnicki", VC "Forca", VC "Janta volej", VC "Fit fan", VC "Vardar", VC "Forsped", VC "Prilep", VC "Makedonijamaks", VC "Ljuboten" i VC "Bami kor".

In order to determine the relationship between anthropometrical characteristics and variables for assessment of situation-motor knowledge the linear regression analysis is applied, where criteria is the variable for assessment of the situation-motor knowledge and the predictors are anthropometrical variables.

The study applied the following variables: variable for assessment of situation-motor knowledge: smash from the zone 4 (ATT4).

Variables for assessment of anthropometrical characteristics: body height (BH), body weight (BW), hand length (HL), hand span (HS), arm length (AL), leg length (LL), the upper arm (UA), the upper arm with a maximum muscle contraction (UAMK), the volume of the forearm (VF), thigh circumference (TC), volume shin (VS), elbow diameter (ED), wrist diameter (WD), knee diameter (KD), skinfold and subcutaneous abdominal adipose tissue (SSAAT), skin folds and skin folds back (SFSFB), skin fold and upper arm subcutaneous fat (SFUASF), skin fold and skin folds of the lower leg (SFSFLL).

## 3. Results and Discussion

Regression results for the variable rejection of the attach from the zone 4, anthropometrical characteristics variables are shown in table 1. At the total samples of respondents, this system of variables has statistically significant impact on variable for assessment of situation-motor knowledge, smash from the zone 4 (SMA4),  $Q(F)=.003.$ , coefficient of multiple correlation ( $RO=.495$ ), showing a positive connection of the predictor

variables in this variable, a coefficient of determination (DELTA = .245), shows that 24% of the criterion, can be explained by the predictor variables.

Partial regresiski coefficients (BETA), show that despite the fact that the system of the predictor variables have statistically significant influence on the criteria, but the variables has not a single statistically significant effect on the criterion variable.

**Table 1.** Regression analysis for the variable (SMA4)

SMA4	Correlations		Unstandardized Coefficients		Standardized Coefficients		
	r	Part-R	B	SG	Beta	t	Q(B)
BH	.306	.087	.009	.009	.157	1.006	.316
BW	.133	.028	.023	.070	.052	.323	.747
HL	.024	-.158	-.087	.047	-.202	-1.844	.067
HS	.262	.126	.051	.035	.159	1.463	.146
AL	.376	.139	.015	.009	.204	1.616	.108
LL	.286	.036	.002	.005	.051	.418	.677
UA	.096	.047	.027	.050	.153	.546	.586
UAMK	.048	-.040	-.018	.040	-.114	-.459	.647
VF	.099	.104	.062	.052	.189	1.204	.231
TC	.016	-.043	-.005	.011	-.061	-.490	.625
VS	.073	-.017	-.005	.027	-.027	-.190	.850
ED	-.179	-.087	-.082	.081	-.130	-1.001	.319
WD	.022	-.053	-.093	.151	-.064	-.615	.540
KD	-.026	.007	.006	.073	.011	.080	.936
SSAAT	-.051	.032	.028	.076	.049	.366	.715
SFSFB	-.087	-.118	-.127	.093	-.192	-1.360	.176
SFUASF	-.091	.031	.037	.104	.058	.351	.726
SFSFLL	-.114	-.044	-.039	.077	-.061	-.502	.617
R=.495    DELTA=.245    SIGMA=3.671    F(18.132)=2.386    Q(F)=.003							

#### 4. Conclusion

The research was made on on a sample of 151 female volleyball players in the age of 14-18 in Macedonia, which represents the population of players compiting in state championships for the young categoris in season 2009/10. Based on the obtained results it can be determined that the predictor system of anthropometrical variables has statistically significant relationships on variables for assess of the situation-motor knowledge.

## REFERENCES

- Milenkoski J (1990). Relacii pomeju neкои kognitivni, bazi~ni motori~ki i situaciono-motori~ki sposobnosti kaj odbojkarite od Prvata makedonska dr`avna liga. Magisterski trud, Skopje: Fakultet za fizi~ka kultura.
- Milenkoski J (1999). Relacii i razliki na neкои kognitivni, specifi~no – motori~ki sposobnosti, konativni karakteristiki i situaciono-motori~koto znaewe kaj odbojkarite od plej-of i plej-aut natprevarite na Makedonija 1997/98 godina. Doktorska disertacija, Skopje: Fakultet za fizi~ka kultura.
- Milenkoski J, Osmanka N (2007). Homogenost morfoloških karakteristika, motornih i specifično–motornih sposobnosti kod mladih odbojkaša. Sportski logos, godina 5, broj 8/9, Mostar: Nastavnički fakultet- Odsjek za sport i zdravlje.
- Milenkoski J, Hristov G, Zafirovska A (2009). Relacii pomeju neкои morfolo{ki karakteristiki i motori~ki sposobnosti kaj odbojkarkite-u~esni~ki na svetskite prvenstva 2002, 2006 i Olimpiskite igri 2004 i 2008 godina. Simpozium za sport i fizi~ko obrazovanie na mladi, Federacija na Sportskite pedagozi na Republika Makedonija.
- Zafirovska A (2010). Struktura na antropometriskite karakteristiki vo zavisnost od situaciono-motornoto znaenje kaj odbojkarkite od 14-18 godi{na vozrast vo Republika Makedonija. Magisterski trud, Skopje: Fakultet za fizi~ka kultura.