ANALYSIS THE MOTOR ABILITIES INFLUENCE ON SPIKE PRECISION IN VOLLEYBALL

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Abstract:

The aim of this research is to determine the influence of some motor abilities on spike precision in volleyball.The sample consisted of 50 pioneer volleyball players, aged 14 and 15 ± 6 months, from Nis and Prokuplje, the participants of volleyball camp that was held in August this year in Karatas, the Republic of Serbia.The motor abilities were assessed by 15 variables and the three tests to evaluate speed, coordination, explosive strength, repetitive strength and flexibility. In order to evaluate the spike precision the test was used , hitting the horizontal target by spike jump from the position IV in to zone V (SMIV-V). The data was processed by conventional procedures to provide information on statistical parameters for all predictor and criterion variables. A standard regression analysis was used. Based on the findings of research and the discussion, one could unfailingly conclude that there is a statistically significant correlation of motor variables with the spike from the position IV in to the zone V.

Key words: *juniors, speed, coordination, explosive power, flexibility, regression analysis*

INTRODUCTION

Based on the structure movement analysis in the game of volleyball, it is assumed that all moving activities are the results of motion development level or motor abilities, which manifest themselves differently, so the game of volleyball consists of two important structures of situational-motor abilities. Conditionally can be divided into:

a) basic motor abilities-motor abilities that correspond to all the movements of players without the ball and

b) volleyball (specific) motor abilities-motor abilities that correspond to all the movements of players before touching the ball and in contact with the ball.

Among these categories of SMS abilities obviously there is a positive correlation. The player movement with the ball in motion is on multiple levels dependent of basic motor abilities. Therefore, it can be pointed out that the level of volleyball motor abilities directly depends on the level of development of a certain basic motor abilities. The generally accepted rule is that the tasks of motor abilities such as: speed, repetitive strength, explosive strength and agility are classified in the motor movement that is still, usually and most often, classified into simple structure, while the tasks of: precision, balance, flexibility and coordination are classified in a complex situational-motor structure.

The specific abilities that are relevant for successfully playing the volleyball, are named situational-motor abilities (SMS) because, in fact, theirs's greatest work "consisted of exactly certain combination of the basic motor abilities and the lower part of the cognitive and functional abilities,

and conative characteristics.

The subject of this research is correlation between motor abilities and specific motor abilities- pioneer volleyball players.

The goal of this research is to determine the impact of predictor variables (speed, coordination, expolosive power, repetitive strength and flexibility on criterion variable (spike precision).

Research tasks are:

- To measure the value of the results of speed, coordination, explosive strength, repetitive strength andflexibility,

- To measure the precision of spike in volleyball and

- To calculate the impact of speed, coordination, explosive strength, repetitive strength and flexibility on spike precision in volleyball.

Due to the subject, problem, goal and task of research, we can form the following hypothesis: H1 - There is a statistically significant impact of speed, coordination, explosive strength, repetitive strength and flexibility on spike precision of pioneer volleyball players.

METHODS

The sample of examinees consisted of 50 pioneer volleyball players. The main criteria were that: the examinees were 14 and 15 years old ± 6 months, all examinees were participants of the volleyball camp that was held in august this year in Karatas, The Republic of Serbia. The volleyball players were selected by coaches who are working in volleyball clubs in Nis and Prokuplje.

The sample of predictor variables:

a) Speed

    1st Taping hand (MBRTAR)

    2nd Taping foot (MBRTAN) and

    3thTaping feet on the wall (MBRTNZ)

b) Coordination

    4th Infiltration and skipping (MPROPR)

    5th The steps to the side (MOKOST)

    6th Agility with the baton (MOKPAL)

c) Explosive power

    7th Triple of points (M3UDALJ)

    8th Running 20 m high start (MES20V)

    9th Throw a medical sitting (MBAMSE)

d)Repetitive power

    10th Troop withdrawal (MPOTR)

    11th Shelter (MZAKT)

    12th Push-ups (MSKLEK)

e) Pliability

    3th Spagat (MŠPAG)

    14th Deep bend (MFLPRK)

    15th Iscret (MFLISK)

The sample of criterion variables:

1st Hitting the horizontal target by spike jump from the zone IV in the position V (SMIV-V).

Description test:

Objective: To measure the precision of hitting the horizontal target by spike jump. Equipment: Volleyball court with net height of 2:43 m, basketball hoop with 10 balls and the protocol. Assignment: The candidate is standing behind the attack line in position number four.The target is on the other side of the court in zone number V, the square size of 1.5 x 1.5 marked by adhesive tape 5 cm wide. Additioner gives the ball to candidate who independently throws the ball and spikes into the target.

Rating:

-the ball hits the square or the square line - 1 point,

- the ball doesn't hit the square - 0 points.

Final Score: adds the total score of 5 attempts.

Remarks:One test attempt is allowed. The rhythm of taking the ball, the height and technology of throwing the ball are selected by examinee. We need a measurer, and at least two ball collectors.

Note: The attempt is to be repeated if the examinee throw the bad ball ("burn") or if he spikes opposite to the rules of the game.

All results of this study were processed by usual procedures that provide informations on statistical parameters for all predictor and criterion variables using the statistical package STATISTICA 6.0 for Windows. The multiple correlation coefficient (Ro), the coefficient of determination criterion variables (DELTA), regression coefficient (Beta), significant regression coefficients Q (BETA), realized the level of significance (t) and a standard error beta coefficient (B) are calculated.

RESULTS

The individual motor variables analysis based on the regression coefficients (Beta) and its significance Q (BETA) we can conclude that there is a statistically significant impact on criterion variable with variables standing triple of M3UDALJ (Beta =-. 480), at the level of significance of Q (BETA) .021, Running 20 m high start MES20V (Beta =-.

Table 1. Regression analysis of variables spikes from position IV to Zone
V is the systemof motor variables

Variable	B	t	BETA	Q(BETA)
MBRTAR	.119	.881	.148	.328
MBRTAN	.323	.915	.221	.082
MBRTNZ	.165	.825	.068	.580
MPROPR	-6.577	-.500	-.056	.450
MOKOST	-.221	-1.420	-.190	.101
MOKPAL	-.203	-.627	-.071	.348
M3UDALJ	-1.488	-2.101	-.480	.021
MES20V	-1.221	-2.656	-.220	.015
MBAMSE	9.221	2.315	.113	.035
MPOTR	1.226	.116	.011	.962
MZAKT	1.201	.512	.032	.566
MSKLEK	5.201	.101	.010	.901
MŠPAG	-2.128	-.963	-.122	.168
MFLPRK	-361	.816	.219	.120
MFLISK	1.713	.640	.040	.621

220), at the level of significance of Q (BETA) .015 and throwing a medical in the sitting position (BETA =. 113), at the level of significance of Q (BETA) .035.

CONCLUSION

The aim was to determine the predictor variables correlation (speed, coordination, explosive strength, repetitive strength and flexibility to criterion variable (spike precision). After analyzing the results the following conclusion can be derived :
-The three variables of motor skills (M3UDALJ, MES20V and MBAMSE) were statistically significant associated with spike jump from the position IV in to zone V (SMIV-V) so that hypothesis H1 is partiallyonfirmed

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АНАЛИЗА НА ВЛИЈАНИЕТО НА МОТОРНИТЕ СПОСОБНОСТИ ВРЗ ПРЕЦИЗНОСТА НА СМЕЧИРАЊЕТО ВО ОДБОЈКАТА

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Апстракт:

Истражувањето е спроведено со цел да се утврдат релациите на некои моторни способности врз прецизноста на смечирањето во одбојката. Примерокот на истражувањето го сочинуваа 50 одбојкари од јуниорската возраст од 14 и 15 години ± 6 месеци од Ниш и Прокупље кои беа учесници на одбојкарскиот камп во Каратаж во Србија. Моторните способности се проценувани со 15 тестови (по три тестови за брзина, координација, експлозивна снага, репетитивна снага и флексибилност). За проценување на прецизноста при смечирањето применет е тестот – погодување хоризонтална цел со смечирање во скок од позицијата IV во зоната V (SMIV-V). Податоците се обработени со регресивна анализа. Врз основа на резултатите од истражувањето и нивната дискусија утврдено е дека постои статистички значајна поврзаност на системот моторни тестови со смечирањето.

Клучни зборови: *јуниори, брзина, координација, снага, флексибилност, регресивна анализа*