

EVALUATION OF JUMPING TECHNIQUES IN KOSOVO REPRESENTATIVES OF WOMEN'S VOLLEYBALL

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Abstract

Volleyball is among the most popular team sports in the world that is characterized by dynamic action with many strokes, blockages and other technical and tactical elements. There were 16 players of the volleyball team of Kosovo aged 18-31 included paper in this.

The measurements were made during the preparatory period of the Kosovo national team for qualifying for the World Cup (Japan 2018) during 2017. Participants were divided according to positions in the game: wing spiker (right side) (n = 3), blocker (n = 5), wing spiker (left side) (n = 3), receiver (n = 5) and libero (n = 2).

The average height of the followers is 171.50 cm, which is smaller than the receiver height 173.50, the height of which is lower than the correctors 179.17, while the average body height of the blockers is lower than the correctors 178.60 cm, while libero players have lower body height than all players, 165.50 cm.

During the motor skill test, in hitting the ball, passers have the lowest value of 51.50cm, and then the receivers with 54.25cm, thirds are the spikers with a height of 55.67cm which is less than the liberos with 57.50cm and the average of the blockers that have the best score of 60.20cm.

The results of this study in morphological variables are similar to the results of other researches. Vertical jump scores and tests are not as predicted as the positions in the game, since in the attacking jump the spikers have reached not very high results, while the libero players have had the best results, which is not the case in the research on volleyball in the developed country.

Keywords: volleyball players, passers, receivers, spikers, blockers, libero, vertical jumping.

Introduction

Volleyball is among the most popular team sports in the world that is characterized by dynamic action with many strokes, blockages and other technical and tactical elements. The volleyball player is characterized by the explosive force of the lower limbs, as the game needs to jump up to perform a strong hit and at the same time defensive players jump to prevent the opponent from gaining points. There is very little research in volleyball, especially with regard to the explosive strength of volleyball players according to the positions in the game. In addition to the technical-tactical aspects in volleyball, morphological parameters and motor skills are important, especially the explosive force, agility and reaction speed (Amasay, T., 2008); (Lidor, R., et al., 2010).

All these moves are done very quickly at short intervals around the net which is 224 cm high for women and 243 cm for men. Usually the players are divided according to the positions in the game: spikers, blocker, setter, receiver, and libero.

The impact of the vertical jump of players according to positions in the game is very little explored. So Marques and Associates (2009) did not find any differences between players based on their position in the game. Jumping skills differences were not found in junior players according to positions in the game (Duncan et al., 2006). However, Sattler et al. (2012), have found differences between senior volleyball players depending on the position in the game.

The jumping skills are tested with many tests, such as on different platforms of force, on contact mattresses, field tests etc. In our case, a New Test Powertimer is used with typical photo-cells and jumps, which are recorded in the CEV database. Typical volleyball tests are: jump defense - blocking and attacking jump.

The purpose of this paper was to evaluate the vertical jump ability of the women's volleyball players.

Methodology

16 players from Kosovo's volleyball team, aged 18-31, are involved in this analysis. The measurements were made during the preparatory period of the Kosovo national team for qualifying for the World Cup (Japan 2018) during 2017. The participants are divided according to positions in the game: spiker (n = 3), blocker (n = 5), passer/setter (n = 3), receiver (n = 5) and libero (n = 2).

All players were healthy without any harm 30 days before the measurement. All participants in the process were informed about the purpose of the measurement and their consent to participation was obtained.

Procedure

In this study, morphological variables, bodily masses and body height and motor tests are taken: high jump from the ground without the help of the hands, the vertical attacking jump and the vertical defensive-blocking jump.

The tests were done during the preparations of the Kosovo women's representative for qualifying for the World Cup in Japan (2018). The measurements were made in September 2017, in the room where they were trained, with favorable conditions, where the temperature was between 21-23 degrees Celsius in the first hours (10-13h). First, the body mass and body height were measured; the players were dressed in a pair of sports pants and tanks before the start of the exercise. The players first performed the exercises on the rolling carpet for 6-7 minutes and after the short muscle extension they performed three attempts for each kind of the jump. Between each test the players had the rest period they set themselves within the 3-5 minute interval. Jumping from the ground without the help of the hands is measured with the New test Power Timer device, while the vertical jump and defense jump tests are measured near the net in the volleyball field. During the jump from the place, the player has supported her hands, has gathered her knees up to 900 and without moving her hands has made 3 consecutive jumps. During the assaulting jump, the player according to her wish, has made 2-3 push-ups; then continued with an offensive hand in hand jumping, similar to the jump in the game. During the defensive jump-block, the hands were in front of the body, similar to the position in the game when the players block the opponent's strike, the player after kneeling the knees, and with a short burst of hands, jumps to as high as she can, trying to stretch out her hands maximally trying to touch the highest point.

The body mass was measured in the In Body, while the body height was measured with anthropometer Lafayette.

Results

Table 1 shows the results of descriptive parameters for motor tests and morphological variables. The average body height of the passers/setters is 171.50cm, which is smaller than the receivers 173.50, where the height is smaller than the spikers 179.17, while the average of the blockers is lower than 178.60 cm, while the libero players have the height bodily more than the other players, i.e. 165.50 cm.

Regarding weight, liberos' weight is lower and passers 63.15 kg and 63.50 kg, the central blockers are slightly over 65.36 kg, while spikers and receivers have almost the same weight (66.87 spikers and 66.88 receivers).

In the vertical jump tests, without the help of the hands, passers (37.05 cm) and spikers (37.33cm) had a lower jump, followed by receivers with 40.15cm, which is less than the liberos (41.60cm), while the central blockers have achieved the best score of 43.50cm.

During the attacking jump, passers have the lowest jump value 51.50cm then the receivers come with 54.25 cm; third ones are spikers with the 55.67cm jumping, which is less than liberos with 57.50 cm and the central blockers who have the highest score of jumping 60.20.

During the blockade jump, the same results were achieved by receivers and passers / setters 40.50 cm, the lowest score was reached by spikers with 39.67cm, while the central blockers with 45.20cm and liberos had the similar jump height of 45.50cm.

Table 1. Descriptive parameters of motor variables based on positions in the game

	Passer/setter	Receiver	Spiker	Central blocking	Libero
Body height	171.50 ± 0.71	173.50 ± 2.04	179.17 ± 6.25	178.60 ± 4.79	165.50 ± 0.71
Body mass	63.50 ± 5.37	68.88 ± 9.69	66.87 ± 4.70	65.36 ± 6.70	63.15 ± 3.75
Newtest	37.05 ± 1.06	40.15 ± 9.27	37.33 ± 0.21	43.50 ± 10.05	41.60 ± 1.13
Attacking a jump	51.50 ± 7.78	54.25 ± 3.86	55.67 ± 4.93	60.20 ± 6.22	57.50 ± 12.02
Blocker jump	40.50 ± 6.36	40.50 ± 3.32	39.67 ± 4.72	45.20 ± 4.95	45.50 ± 4.95

With the multivariate variance analysis, where the Bonferon criteria are used, differences in morphological variables and on the motor tests according to the position of the players in the game have been established. According to the results shown in Table 2, there are significant statistical differences only in a morphological variable at the body height between the blockers and the libero, as well as the libero and spikers, at the confidence level sig = .05. In all other variables other than systemic differences, there is no difference between players.

Table 2. Differences between volleyball players according to the positions in the game at the height of the body

	(I) Position	(j) Position	Mean difference (i-j)	Std. Error	Sig.
Bodily height	Libero	Passer/setter	-6.00	4.083	1.000
		Receiver	-8.00	3.536	.449
		Spiker	-13.67*	3.727	.037
		Blocker	-13.10*	3.416	.028

Discussion

The results of this paper in morphological variables are similar to the results of other researches (Miguel Martín-Matillas et al., 2013). Results in vertical jump tests are not according to expectations in relation to the positions in the game. Thus, during the jump from the point without the help of the hands, the lowest jumps have been achieved by the passers/setters and spikers, then the receivers are ranked lower than liberos, while the central blockers have the best score of the jump. During the attacking jump, the passers/setters have the lowest jump value, and then the receivers, the third in the row are the spikers that are lower than liberos and the central blockers that have the best result. During the defensive jump, the same results are achieved by the receivers and the passers/setters, the worst results are with the spikers, while the central and free blockers have similar jumping altitudes; similar results have also been achieved by Sattler and others (2012). The results of the attacking jump and during the blocking jump are not based on expectations because the spikers have achieved low jump scores, while libero players have had the best results, which are not the case in research done in developed volleyball countries (Slinde et al., 2008).

Conclusions

Based on the results obtained in this paper, it can be concluded that for good results in volleyball it is necessary to pay attention to the morphological parameters, and in particular the vertical jump type motor tests. In the sample of this paper, the results obtained at body height are similar to similar research, while in vertical jump tests, the results do not match those of similar research based on the positions in the game.

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