Physical Skills in Male Volleyball Players 14-18 Years Old

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Abstract

During the monitoring of volleyball teams in Albania during training, it was noticed that coaches pay more attention to technical elements and not to physical abilities to ages 14-18 years. The aim of this study was to find out the trend of improvement and differences with the age on physical abilities of male's volleyball players in Albania. Methods: Participants in this study were N=43 volleyball players from two age categories; N=21, cadet (14-16 yrs.), N= 22 and junior (16-18 yrs.) Measurement for anthropometrics (body weight, body height) and physical abilities (push up test, curl-up test, standing long jump and vertical jump test) were assessed. Results: Analysis between two age categories shows significant differences. Showed results for anthropometrics and also for physical abilities showed differences between groups of volleyball players. Data of this study for jumping performance using vertical jump CMJ test between groups for cadet vs. junior data show (mean difference= 21.3 cm; Sig= 0.004) while for vertical jump Run up test between groups for cadet vs. junior data show (mean difference= 22.3 cm; Sig= 0.003). Conclusion: In the best interest of the study, it would be good if other teams were involved from different cities of Albania. Suggestions for other studies we recommend in comparing data by positions in the field. Trainers should plan training with these age groups different coordination programs not only technical. This study has limitations with regards to the sampling number of male volleyball players, which is justified for not having sufficient funds.

Keywords: junior, anthropometric, cadet, volleyball

Introduction

Volleyball is characterized by continuous jumps combined with blocks and spikes, numerous short-distance sprints as well as short agility movements that occur repeatedly throughout the match or training session [1]. Physical abilities are of particular importance to every player who plays but specifically, physical skills play a crucial role and affect the intelligence and tactics of the game because during these games a high physical performance is required. The performance of these precise and structured movements depends on anthropometric parameters and physical abilities

[2]. For this reason, players need to focus a lot to improve their physical capacity (aerobic and anaerobic) in order to have a high performance in the game, fast and long-term movements throughout the game both in offence and defense. The coaches who deal with the training are convinced and oriented quite accurately that there is a difference in performance for the anthropometric parameters and physical abilities according to gender and positions in the field with regard to volleyball [3, 4, 5,6,7, 8] and in other team sports [9,10]. The aim of this study was to monitorimin same volleyball player's cadet and junior find out the trend of improvement and differences with the age of anthropometric and physical abilities volleyball players in two team's Albania.

2. Methodology

Participants in this study were N=43 volleyball players from two age categories as follows; N=21, cadet (14-16 yrs.), N= 22 and junior (16-18 yrs.) N=24. Measurement for anthropometrics (body weight, body height) and physical abilities (push up test, curl-up test, standing long jump and vertical jump test) were assessed. Measurements were done in Tirana which is the capital city of Albania in two teams.

Protocols of the test

Weight- It was recorded the weight measurement in kilogram (kg).

Height- On to a scale stadiometer. It was recorded the height measurement was in centimeters (cm).

Push up test - measures upper body strength and endurance. A standard push-up begins with the hands and toes touching the floor, the body and legs in a straight line, feet slightly apart, the arms at shoulder-width apart, extended and at a right angle to the body. The time performed at maximal was 30 seconds.

Curl-Up test -measures abdominal muscular strength & endurance.The curl-up abdominal fitness test requires the subjects to perform as many curl-ups as possible for 30 seconds.

Standing long jump; the volleyball players place their feet over the edge of the sandpit, crouches down and using the arms and legs jump horizontally as far as possible landing with both feet into the sandpit.The players repeat the test 3 times.

Vertical test CMJ and run-up; CMJ- The countermovement jump (CMJ) is a simple, practical, valid, and very reliable measure of lower-body power. The player must keep their hands on the hips throughout the test.The player must perform a minimum of three jumps so that performance averages can be calculated. *Run up;* the coach decides before testing to include the use of the arm-swing and steps.

3. Results

Data from table 1 show descriptive statistics (mean, Std. Dev.) for anthropometric variables for the two age categories group with regard to volleyball male. Participants

in this study were (N=43) volleyball players from three age categories as follows; N=21 cadet (14-15 yrs.), N= 22, and junior (16-18 yrs.). Descriptive mean data are shown for body height, body weight.

Table 5 Descriptive statistics for anthropometric variables in male's volleyball players by age group categories

		N	Mean	Std. Dev.
Body Height	Cadet (14-15 yrs.)	21	160.2	7.3
	Junior (16-18 yrs.)	22	166.5	7.4
Body Weight	Cadet (14-15 yrs.)	21	55.2	8.7
	Junior (16-18 yrs.)	22	64.7	13.0

Data from table 2 show descriptive statistics (mean, Std. Dev.) for physical abilities variables for the two age categories group with regard to volleyball male's. Descriptive mean data are shown for Push up Test (strength upper body); curl up test (strength core body) and standing long jump test (explosive power lower limbs).

Table 2 Descriptive statistics for physical abilities variables in male's volleyball players by age group categories.

		N	Mean	Std. Dev.
Push ups 30s	Cadet (14-15 yrs.)	21	3.6	3.8
	Junior (16-18 yrs.)	22		4.2
Curl up 30s		21	18.8	4.0
	Cadet (14-15 yrs.)	9	20.6	3.6
	Junior (16-18 yrs.)	6	21.7	3.3

Standing Long Jump				
	Cadet (14-15 yrs.)	22	161.2	23.1
	Junior (16-18 yrs.)	24	178.9	17.9

Data from table 3 show descriptive statistics (mean, Std. Dev.) for physical abilities variables for the two age categories group with regard to volleyball male's. Descriptive mean data are shown for vertical jump CMJ test (strength lower body limbs), vertical jump Run up test (strength lower body limbs).

Table 3 Descriptive statistics for physical abilities variables in male's volleyball players by age group categories.

		N	Mean	Std. Dev.
Vertical Jump CMJ	Cadet (14-15 yrs.)	22	233.3	26.6
	Junior (16-18 yrs.)	24	254.7	18.8
Vertical Jump Run Up	Cadet (14-15 yrs.)	22	237.7	27.0
	Junior (16-18 yrs.)	24	260.0	18.8

4. Discussion

The findings of this study are in line with the results of [11] which found significant differences in body height. Comparison data for body height between groups cadet vs. junior data show (mean difference= 6.3 cm; Sig= 0.045). Data from this study for body weight between groups cadet vs. junior data show (mean difference= 9.4 kg; Sig= 0.010). This study investigated the differences between the two age groups for male volleyball players for anthropometric parameters and physical fitness components. Other data results from [12] showed that anthropometric parameters are age-dependent. Data results from this study for strength using push up test between groups cadet vs. junior data show (mean difference= 0.8 counts; Sig= 0.699). Comparison data of this study for the core strength using curl up a test between groups cadet vs. junior data show (mean difference= 1.1 counts; Sig= 0.583) while for standing long jump test between groups cadet vs. junior data show (mean difference= 17.7 cm; Sig= 0.008). The study of [11] result showed differences for standing long

jump where players +17 years old performed better than -14 years old. Also significant differences were found between this 2 age categories. Finding from [13] showed that physical performance seems to be dependent on the playing positions. Finding from different studies [14, 15 and 12] showed that significant differences in fitness parameters were found between game positions in a wide range of sports. Data of this study for jumping performance using vertical jump CMJ test between groups cadet vs. junior data show (mean difference= 21.3 cm; Sig= 0.004) while for vertical jump Run up a test between groups cadet vs. junior data show (mean difference= 22.3 cm; Sig= 0.003). This study has limitations with regards to the sampling number of male volleyball players which is justified for not having sufficient funds. In the best interest of the study, it would be good if other teams were involved from different cities of Albania. Suggestions for other studies we recommend in comparing data by positions in the field.

5. Conclusion

Results show a statistical increase between age categories for body weight, height and stranding long jump, vertical jump (CMJ and run-up) while for the other measurement of physical fitness components no significant improvement was found mostly in female volleyball players with regard to age groups. This study has limitations with regards to the sampling number of male volleyball players which is justified for not having sufficient funds. In the best interest of the study, it would be good if other teams were involved from different cities of Albania. From the data obtained from this study, we suggest coaches to develop in training and exercises to effect the development of physical skills of volleyball players, not just the technical elements.

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