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Peculiarities of physical fitness of handball players taking into account their playing role

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Abstract

Purpose: Improving the physical fitness of handball players, taking into account the role of the game.

Methods: theoretical analysis and generalization of scientific and methodological literature, pedagogical observation, pedagogical testing, pedagogical experiment, mathematical and statistical analysis.

Results: The analysis of physical fitness indicators of youth handball players taking into account their playing role has shown that the highest level of development of speed at a distance of 30m. is established for center players, their index was 4.30± 0.15 s.; the slowest were line players - 4.70± 0.04, followed by goalkeepers who have an index above average of 7.9%. In general, the centers are ahead of the linemen by 10.9%, goalkeepers by 7.9%, half-middlemen by 5.8%.

Conlcusion: Coaches need to pay attention and adjust the training process on the work of increasing the strength and speed qualities of the muscles of the lower limbs, that is, to increase the load of strength orientation. It is recommended that coaches during training sessions should develop the identified lagging qualities, and to conduct a clear pedagogical control over the dynamics of sportsmanship formation.

Keywords: special strength, handball players, running at 30 m, improvement of the theory and methodology.

Introduction

Methodological foundations of long-term training of handball players are directly related to the problem of improving the educational and training process. To further improve the methodology of modern sports training requires a strict coordination of the direction of the educational and training process and the specific requirements of competitive activity in specific sports disciplines. In team sports, in particular, in handball, until now there are no formulated criteria that would provide an opportunity for reliable long-term prediction of the success of sports improvement on the basis of taking into account the playing role in the team, which was the justification for this study.

The last decades are characterized by the improvement of the theory and methodology of youth sports as an important part of the whole system of sports training in handball. On the basis of fundamental research and normative - program materials established a number of regularities of multi-year training of handball players, starting at a young age and the main stages of sports training handball players (3,4,10). In the available literature on this problem there are quite diverse data reflecting the state of players at different stages of the annual cycle of training, and the same diverse recommendations for the construction of this training (1,7,8,9). In the works of leading experts discuss issues related to the assessment of the state of the modern system of special strength and coordination training, but full-fledged research on the training of handball players taking into account the game role in full in the literature is absent. In connection with the above, we came to the conclusion that at present this problem requires study and is very relevant.

Methods

Taking into account the peculiarities of handball and recommendations of leading handball specialists in our research we used the most informative control exercises. Given that the object of the study - handball players of youth age, we decided to use extended tests that contribute to a more effective management of the training process of handball players, and most importantly - to diagnose a wider range of different physical abilities. So the level of development of speed in handball is determined by the results of “running at 30 m”, and then used a specific test - “driving the ball over a distance of 30m”. High informativeness is noted in such control exercises as “jump without swinging hands” and “jump up from a place”. So “jump without swinging hands” determines the explosive strength of legs, and tests “jump up from a place”, “throwing the ball with the right and two hands” reflects the level of development of speed and strength qualities of handball players.

Results and discussion

It is necessary to control the development of sportsmanship in sports games with the help of test indicators during the training process, as

Table 1. Indicators of special physical fitness of handball players of different playing roles

Playing role	Body length	Bodyweight	Chest circumference	Running at - 30m (s)	Driving the ball 30m.(c)	Jump without swinging over-head (cm)	Jump up from a standing position,(cm)	Throwing 1kg ball with one hand (cm)	Throwing a 1 kg ball sitting down with two hands (m)
Goalkeeper	183,3±6.5	76,7±2.66	92,8±5,23	4.64 ± 0.03	4.70±0.07	162.8±6.40	48,9±1,3	21.02.±1,8	8.80.±0,8
center	173.6±6,5	72,3±2,3	91,3±2,7	4.30 ± 0.15	4.48 ±0,13	168.9±7.8	49.1±1,2	18.7±106	7. 99.±1,8
Midfielder	184,4±4.54	76.0±7,04	93,6±4,22	4.55 ± 0.13	4.67±0.07	168.8±9.15	51,4±1,3	20,9±2,3	8.50.±0,98
Line	180,5±2.66	82,7±10,42.	97,4 ±5.74	4.70 ± 0.04	4.80±0.08	165.2±1,41	50,2±1,1	20.2.±2,7	8.0±0.60
Corner kick	**179,± 5,5**	**72,5±3.8**	**89.3±2.3**	**4.34 ± 0.04**	**4.59± 0,14**	**166.8±1,40**	**49.2±1.0**	**18.9±1.07**	**7, 8±0,5**

well as during the period of direct preparation for important competitions. It is known that in various sports a variety of tests are used, with the help of which coaches assess the operational level of performance and prospects of selected candidates for participation in competitions. When exercising control it is necessary to determine the state of readiness of each athlete, so that the coach of the team could make timely adjustments at the pre-competition stage of sports training.

In the test “Ball handling on the distance of 30 m” also the centers are leading, the value of which was 4.48±013, the low index of the linemen - 4.80± 0.08, that is, the centers are ahead of the linemen by 7.4%, goalkeepers by 2.7%. Explosive leg strength, determined in the test “Jump without swinging hands” is the strongest in center players - 168.9 ± 7.8 and in middles - 168.8±9.15, the weakest - in goalkeepers - 162.8±6.40 and in linemen - 165.2±1.41. Center players are ahead of goalkeepers by 3.7% and linemen by 1.4%. Coaches need to pay attention and adjust the training process on the work of increasing the strength and speed qualities of muscles of upper and lower limbs, that is, to increase the load of strength and speed and strength orientation.

According to the test “jump up from a place” the best results were demonstrated by the center and half-middle, they are inferior to the linebackers, whose index was 165.2±1.41. This test is considered to be the most informative for handball players, as it reflects the level of development of speed and strength qualities to the fullest extent. According to the test “Jump up from a place” the highest results are set for the middle and line players, who are ahead of the goalkeepers by 4.8%, line players by 3.4%. In terms of strength endurance, goalkeepers are characterized by the highest indicators in contrast to players of other game roles in the test “Throwing the ball 1kg with one hand (cm)”.

The indicators of goalkeepers amounted to - 21.02.±1.8cm, and the lowest indicators of corner men -18.9±1.07cm, that is, the corner men lag behind the goalkeepers by 10.8%. It should be noted that the goalkeepers also outperform the middles by 11.3%. In the test “Throwing a ball weighing 1 kg with two hands sitting down” the highest results are also set for goalkeepers. Thus, goalkeepers outperform corner players by 11.3%, line players by 9.09%, and half-middle players by 9.0%. It should be noted that throwing the ball and one-handed and two-handed advantage for goalkeepers and these tests in its structure is most similar to the handball throw. In the test “Jump without swinging hands” the strongest index is among the center players and half-middle players, the weakest - among the goalkeepers and linemen (Table 1).

This test is considered to be the most informative for handball players, as it reflects the level of development of speed and strength qualities to the fullest extent. In terms of strength endurance, goalkeepers showed the highest index in the test “Throwing the ball 1kg with one hand (cm)”, which exceeds the repre-

sentatives of all other game roles in the team. In the test "Throwing the ball 1kg sitting with two hands (m)" again the goalkeepers are leading, so they threw the farthest and this index is higher compared to other players. The diagrams (figures) show specific indicators demonstrated in the tests that characterize speed, speed-force, coordination abilities.

Conclusion

In handball players of youth age of different playing roles showed that the highest level of development of speed at a distance of 30m. is established for center players, their index is above average is followed by corner players. In the test "carrying the ball over a distance of 30 m" also lead the center and corner players, the value of which exceeds the indicators of handball players of other game roles. Explosive leg strength, determined in the test "Jump without swinging hands" is the strongest in the centers and in the middles, the weakest - in the goalkeepers and in the linesmen. In the test "jump up from a place" the best results demonstrated by welterweights and linemen, This test is considered the most informative for handball players, as the most fully reflects the level of development of speed and strength qualities. In terms of strength endurance, goalkeepers showed the highest index in the test "Throwing the ball 1kg with one hand (cm)", which exceeds the representatives of all other game roles in the team. In the test "Throwing the ball 1kg sitting with two hands (m)" again the goalkeepers are leading, so they threw the farthest and this index is higher compared to others.

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