Ovidius University Annals, Series Physical Education and Sport / SCIENCE, MOVEMENT AND HEALTH
Vol. XXIII, ISSUE 2 Supplement, 2023, Romania
The journal is indexed in: ERIH PLUS, Ebsco, SPORTDiscus, INDEX COPERNICUS JOURNAL MASTER LIST, DOAJ DIRECTORY OF OPEN ACCES JOURNALS, Caby, Gale Cengage Learning, Cabell's Directories

Science, Movement and Health, Vol. XXIII, ISSUE 2 Supplement, 2023
September 2023, 23 (2): 270-273
Original article

THE EFFICIENCY OF GENERAL PHYSICAL TRAINING IN TRAINING YOUNG VOLLEYBALL PLAYERS (14 – 16 YEARS)

AMZA LAVINIA[1]

Abstract

Aim. The basic component of the entire instructive-educational process, without which its other elements cannot be conceived and conditions the achievement of sports results, as well as the training of players, is physical training. It involves the development of motor qualities, the mastery of a wide variety of motor skills and abilities, as well as the development of the morpho-functional indices of the body, corresponding to the requirements of performance volleyball. This major aspect must be taken into account and must be reflected in the training content, because in recent years the intention to essentialize the means of training, in the sense of choosing those with the most important meaning for the game, has impoverished the arsenal of means used for the physical training of the players.

Methods. The use of plyometric means combined with technical procedures based on an individualized periodization applied according to the particularities of each individual player.

Results. It results from the fact that the research provided us with concrete data regarding the current methodology of action on general physical training and on certain existing dysfunctions in the opinion of the coaches that occur in the training of cadet volleyball players, but it also highlighted the fact that the subjects of the research are located at a relatively close value level, but with differences compared to FRV requirements for this age category.

Conclusions. In conclusion, the use of the proposed programs in the training of cadet volleyball players, determines a faster and more extensive development of the efficiency of game actions and determines a more efficient use of the time allocated to training.

Keywords: volleyball, questionnaire, general physical training.

Introduction

In recent years, most of the specialists in the field of Theory and Methodology of sports training in volleyball have developed a series of works specifying objectives, methodical indications, forms of organization and approach to the instructional-educational process in the training of children and juniors. Knowing how these theoretical guidelines can be applied in practice, as well as highlighting the concrete results that can be obtained from their application, represent objective arguments for supporting the opportunity of experimental type research in this area of interest. The support on which the improvement of the other components of sports training (technical training, tactical training, psychological training) is carried out is the general and specific physical training, having a complex sphere of action that involves acquisitions for improvement, being the essential factor for the progress of performances. The general physical training in the game of volleyball influences both the quantitative indicators of the model of the volleyball player, as well as the qualitative indicators of her technical training, having a decisive role in the evolution of sports performance. In the game of volleyball, the individualization of training or work on moments and areas of the field is necessary due to the following factors: the fundamental requirements of the game of volleyball at the level of cadet volleyball players, the demands of the game model, the particularities of the junior player, the level of training and the competition in which she participates, specific game tasks, conditions imposed by the technical management, injuries and illnesses.

The subjects of our research were the components of 8 cadet volleyball teams (14 – 16 years): L.P.S. Viitorul Pitesti, C.N.M.V. Ploiesti, A.S.C. Juvenile Nicolae Titulescu Brașov, C.S.S.-C.S.M. Târgoviste, C.S. Dacia Mioveni 2012, A.S.C. Bravol Brașov, C.S.N.T Craiova, C.S.U. Medicina Târgu Mureș, who participated in the Women's National Volleyball Championship - cadets in the 2021-2022 competitive season.

Methods

In order to achieve the most accurate training at the level of performance volleyball and in order to apply the most appropriate means in the training of cadet volleyball players, we considered it important to apply some control samples that would provide us with the necessary data for this endeavor.

Applied motor tests:

- Standing long jump;
- Standing high jump;
- Speed 50 m;

[1]Department of Physical Education and Sport, Faculty of Sciences, Physical Education and Informatics, University of Pitesti, Corresponding author: constantinlavinia78@yahoo.com, Romania.

• Lifting of the trunk from lying on the back with the palms at the back of the head;
• Throwing the medicine ball (2 kg).

The need to apply the experiment started from the idea of detecting the level of general physical training of the cadet volleyball teams.

Results

The standing long jump is a test that measures the explosive strength (horizontal extension) of the lower body.

The average obtained by the pilot group is 155.221 cm, and the standard deviation shows us a small scattering of values around the average, its value being 9.094, the percentage being higher at the level of lower values.

The value of the coefficient of variability indicates a dispersion of 5.858%, showing that, regarding the heterogeneity of the sample preliminary experiment, we have a very good homogeneity of the tested girls, that is, the sample is homogeneous.

As can be seen in table no. 17, the lowest average obtained by the tested groups was of the L.P.S. team. Viitorul Pitesti (143.071 cm) and the biggest of the C.S.U. team. Târgu Mureș Medicine (164,307).

In this control sample, the averages obtained by the teams subjected to the research are still on the lower side of the FRV requirements. Thus, the minimum requirement for this sample of FRV is 144 cm.

Table no. 1 Statistical-mathematical indicators for the "standing long jump" test

Statistical indicator	**Number of subjects**	**Value obtained**
C.S.U. Medicina Târgu Mureș	*13*	164,307
A.S.C. Bravol Brașov	*13*	*161*
C.S. Dacia Mioveni 2012	*10*	*159*
C.S.S.-C.S.M. Târgoviște	*12*	*163,333*
C.S.N.T. Craiova	*13*	*160,153*
A.S.C. Juvenil Nicolae Titulescu Brașov	*11*	*143,272*
C.N.M.V. Ploiești	*11*	*143,071*
L.P.S. Viitorul Pitești	*14*	*148,636*
Mediate	*97*	*155, 221*
Standard deviation		*9,094*
CV %		*5,858%*

Another motor test subject to evaluation was the speed of movement in a straight line – 50 m, where the teams subjected to the pilot experiment obtained an average of 9.076 seconds. The standard deviation shows us a small scattering of values around the mean, its value being 0.091, the percentage being higher at the level of lower values.

The value of the coefficient of variability indicates a dispersion of 1.002%, showing that, regarding the heterogeneity of the pilot sample, we have a very good homogeneity of the tested girls, that is, the sample is homogeneous. From table no. 2 we notice that of the 8 groups to which we applied the test, the best results were obtained by the L.P.S. team. Viitorul Pitesti, achieving an average of 8.964 sec., and the worst results were from the C.S.U. team. Medicina Târgu Mureș having an average of 9.230 sec. Comparing the average results obtained by the teams subjected to the preliminary experiment with the FRV requirements for this test, we notice that they are at the lower limit for this age category. The lower limit of the scale established by the FRV is 9.00 sec. and only 20 points out of the maximum 90 points set for this test.

Tabel no. 2 Statistical-mathematical indicators in the "50 m speed" test

Statistical indicator (seconds)	**Number of subjects**	**Value obtained (seconds)**
C.S.U. Medicina Târgu Mureș	*13*	*9,230*
A.S.C. Bravol Brașov	*13*	*9,130*
C.S. Dacia Mioveni 2012	*10*	*9,03*
C.S.S.-C.S.M. Târgoviște	*12*	*9,175*
C.S.N.T. Craiova	*13*	*9,046*
A.S.C. Juvenil Nicolae Titulescu Brașov	*11*	*9,018*
C.N.M.V. Ploiești	*11*	*9,018*
L.P.S. Viitorul Pitești	*14*	*8,964*
Mediate		*9,076*

Standard deviation	*97*	*0,091*
CV %		*1,002%*

Raising the trunk from lying on the back is a test that highlights the strength of the abdominal muscles in speed regime, during 30 sec. of execution. The obtained results show us an average of the groups subjected to pilot research, of 21,742 number of repetitions. The standard deviation shows us a small scattering of values around the mean, its value being 1.308, the percentage being higher at the level of lower values.

The value of the coefficient of variability indicates a relative dispersion of 6.016%, showing that, regarding the heterogeneity of the sample, we have a very good homogeneity of the tested girls, that is, the sample is homogeneous. At the level of the tested groups, the best results were obtained by the A.S.C. team. Bravol Brașov with an average of 23,615 number of repetitions, and the weakest results were obtained by C.S.S. – C.S.M. Trade with an average of 20,692 number of repetitions.

Table no. 3 Statistical-mathematical indicators for the "lifting the trunk from supine" test

Statistical indicator	**Number of subjects**	**Value obtain (no. of repetitions)**
C.S.U. Medicina Târgu Mureș	13	21,538
A.S.C. Bravol Brașov	13	23,615
C.S. Dacia Mioveni 2012	10	22,9
C.S.S.-C.S.M. Târgoviște	12	23,083
C.S.N.T. Craiova	13	20,692
A.S.C. Juvenil Nicolae Titulescu Brașov	11	21,181
C.N.M.V. Ploiești	11	19,909
L.P.S. Viitorul Pitești	14	21,018
Mediate	97	21,742
Standard deviation		1,308
CV %		6,016%

Throwing the medicine ball - 2 kg is another indicator measured in the preliminary group and as for the average, it was 400.517 cm.

The standard deviation shows us a small scattering of values around the mean, its value being 5.755, the percentage being higher at the level of lower values. The value of the coefficient of variability indicates a relative dispersion of 14.368%, showing that, regarding the heterogeneity of the sample of the preliminary experiment, we have a weak homogeneity of the tested girls, that is, the sample is inhomogeneous. Correlating the results obtained by the teams subjected to the preliminary experiment with the FRV requirements, we can see that also in this test the averages obtained are also at the lower limit. The differences between the averages of the seven teams are not significant, so the best average was obtained by the L.P.S. team. Viitorul Pitești (409.285 m) and the weakest by the C.S.N.T. team. Craiova (392,692 m).

Table no. 4 Statistical-mathematical indicators for the "medicine ball throw - 2 kg" test

Statistical indicator	**Number of subjects**	**Obtained value (m)**
C.S.U. Medicina Târgu Mureș	*13*	*404,923*
A.S.C. Bravol Brașov	*13*	*400*
C.S. Dacia Mioveni 2012	*10*	*393*
C.S.S.-C.S.M. Târgoviște	*12*	*398,333*
C.S.N.T. Craiova	*13*	*392,692*
A.S.C. Juvenil Nicolae Titulescu Brașov	*11*	*403,636*
C.N.M.V. Ploiești	*11*	*402,272*
L.P.S. Viitorul Pitești	*14*	*409,285*
Mediate	*97*	*400,517*
Standard deviation		*5,755*
CV %		*14,368%*

The standing high jump is a test that measures the explosive strength (vertical rebound) of the lower body.
The average obtained by the pilot group is 26.466 cm.

The standard deviation shows us a small scattering of values around the mean, its value being 1.473, the percentage being higher at the level of lower values.
The value of the coefficient of variability indicates a dispersion of 5.565%, showing that, regarding the heterogeneity of the sample of the preliminary experiment, we have a very good homogeneity of the tested girls, that is, the sample is homogeneous.
As for the averages obtained by the groups subjected to the pilot experiment, they ranged between 24.857 cm (L.P.S. Viitorul Pitești) and 29.836 (C.S.U. Medina Târgu Mureș).

Table no. 5 Statistical-mathematical indicators for the "standing high jump" test

Statistical indicator	Number of subjects	Value obtained
C.S.U. Medicina Târgu Mureș	*13*	*29,836*
A.S.C. Bravol Brașov	*13*	*26,076*
C.S. Dacia Mioveni 2012	*10*	*26*
C.S.S.-C.S.M. Târgoviște	*12*	*26,916*
C.S.N.T. Craiova	*13*	*26,230*
A.S.C. Juvenil Nicolae Titulescu Brașov	*11*	*25,909*
C.N.M.V. Ploiești	*11*	*25,909*
L.P.S. Viitorul Pitești	*14*	*24,857*
Mediate	*97*	*26,466*
Standard deviation		*1,473*
CV %		*5,565%*

Conclusions

In performance volleyball, physical training is the foundation on which all other factors of sports training improve, having a special contribution to the increase of sports performances at all sports levels, in different weights, however, at the junior level being all the more important they can lay the foundations for future senior champions.

The development, application and confirmation of the effectiveness of training programs for volleyball players, requires the establishment of an own training methodology in accordance with the requirements imposed by the technical-tactical content and the motor structure of their activity during the game.

The research provided us with concrete data regarding the current methodology of action on physical training and on certain existing dysfunctions in the training of junior volleyball players, but it also highlighted the fact that the subjects of the research are located at a relatively close value level, but with significant differences from statistical point of view in some samples against FRV requirements.

References

Bompa, T. O. (2003). *Everything about the training of young peasants*, Bucharest, Ex Ponto Publishing House.

Lidor, R., & Ziv, G. (2010). Physical and physiological attributes of female volleyball players—a review. *Journal of Strength and Conditioning Research*, 24(7), 1963–1973.

Niculescu, I., & Rada, L. (2017). Assessment of the competition level of junior female volleyball players. *Journal of Physical Education and Sport*, 17(4), 2665–2668.

Niculescu, M., Mateescu, A., Creţu, M., & Trăilă, H. (2006). The scientific and applied bases of muscle training, , Craiova, *University Publishing House*.

Niculescu M., Malusaris G., Niculescu I., & Vladu L. (2008). Volleyball in the form of questions and answers, Craiova, *University Publishing House*.

Prevost, P. (2013). *La bible de la preparation physique*, Paris, Editions Amphora.

Simion, Gh. (1999). *Research methodology of human activity in motion*, Pitesti, Pitesti University Publishing House.

Simion, G., Mihăilă, I., & Stănculescu, G., (2011). *Sports training – Systemic concept*, Constanța, Ovidius University Press.