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Original article

DEVELOPMENT OF SUPPLENESS IN THE JUNIOR VOLLEYBALL TWO

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Abstract

Aim. The aim of the present work is to conduct a study on the creation of suppleness and mobility of junior volleyball players 2 by applying stretching programs over a period of 12 weeks.

Methods. Through the method of tests, I have stability batteries for initial and final tests to determine the effectiveness of the research. We tested the following samples to measure suppleness and mobility: coxofemoral mobility in the anteroposterior plane, coxofemoral mobility in the frontal plane; lateral movement for 4 m.

Results. Following the applied tests, it was observed: in the coxo-femoral mobility test in the anteroposterior plane, in the initial test the group recorded an average of 8.41, and in the final one a higher average, namely 9.91; in the coxo mobility . - femur in the frontal plane, the subjects in the initial testing had an average of 13.5, and in the final testing an average of 14.91; and in the test of lateral movement over 4m, we note that the average performance of the initial testing was 37.167, and the average performance on the final test was 38.71.

Conclusions. The use of these stretching programs in a systematic and rational way in the training of volleyball players led both to the improvement of joint mobility and muscle suppleness and to an increase in the performance capacity of these athletes.

Keywords: mobility, junior player, competition, national junior team.

Introduction

Volleyball is one of the most popular sports in the world. It was invented in the United States between 1893 and 1895. It is considered to be the second most popular sport in favor of its followers, and it spread quite quickly to all continents. This aspect also determines the dynamics of research, and many authors are concerned with the evolution of various aspects of this sport. Among the sports, the game of volleyball has attracted a lot of attention in different countries Includes offensive and defensive skills. A player should be trained in both skills for optimal performance and to get the best out of the game (Marín et al., 2010;). Therefore, each player must master the skills by considering the technical aspects of the game, which can be achieved by adopting modern methods based on scientific foundations (Misjel et al., 2022).

In general, in sports activity and performance sports in particular, the degree of development of general and specific motor skills is given by the level of physical training, which actually represents the athlete's ability to perform motor acts in different regimes of speed, strength, flexibility, resistance, etc., in order to perform individual and collective actions that are part of the sports technique (Simion et al., 2011, p.118).

An important component of general well-being is motor quality and flexibility. Unfortunately, it is usually not among the main points of interest of many sports training programs. It is usually given little or no attention. Although the benefits of regularly practiced sports are well known, few people realize that flexible joints and stretches performed regularly are also vital for optimal health and especially for the proper performance of sports training.

Alexe Nicu presented muscle training programs based on working with loads, following the debate about the importance of physical training for athletes. In addition to the theoretical aspects of strength and strength training, Nicu also presented muscle training programs based on working with the barbell for various sports branches (Nicu, 1993).

Platonov (1996) addressed the issue of physical training in the sports training process and highlighted the importance of strength training in obtaining a maximum sports form.

Professor Dragnea and S. Mate-Teodorescu (2002) approached the motor quality of strength, primarily from a theoretical point of view, extensively researching the factors that condition the development of strength and its forms of manifestation

Methods

We performed two passive stretching programs at the end of the training over a period of 12 weeks in the Flămanda Hall of the Tomis Sports Complex in Constanța.

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Through the test method, we established the batteries of initial and final tests to determine the effectiveness of the research. The following samples were tested:

- coxofemoral mobility in the anteroposterior plane - sitting on a 50 cm high bench, with the tips of the feet at the edge of the bench; a ruler graduated in centimeters is fixed with the 50 graduation at the level of the bench, with the small graduations up and the large graduations down, the performer bends the trunk forward, with perfectly extended knees sliding with the palms down on the ruler; the final position is maintained for 3 s, enough time to read the graduation reached with the fingertips;
- coxofemoral mobility in the frontal plane - from sitting far apart with the trunk bent forward, the hands resting on the ground - a ruler graduated in centimeters is fixed with the gradation 0 at the ground level, reading the gradation at the groin when the performer has maximum opening, the legs being stuck at the knees;
- lateral movement on 4 m - from the lateral lunge touching the line with the hand, movement with added or crossed steps on the distance of 4 m for 45 s. Touching the lines with the hand is counted. The test is imposed by the FRV as a control test.

Results

The results obtained from this research are presented in tables and graphs. They were processed statistically, following their ranking, simultaneously highlighting the progress made.

On the basis of the obtained data and the calculated statistical indicators, an analysis of the obtained results could be carried out.

Following the statistical interpretation of the obtained data, tables were drawn up for each control sample, including the results obtained at the initial and final tests and the difference between them. The calculated statistical-mathematical indicators were the arithmetic mean, standard deviation, coefficient of variability, amplitude, and index of progression.

The graphs include the evolution and dynamics of the arithmetic mean values obtained during the initial and final tests.

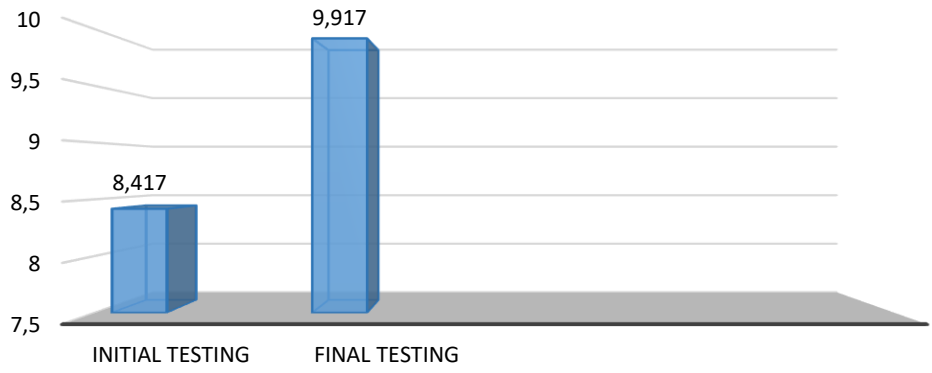

Figure 1. Results recorded in the coxofemoral mobility test in the anteroposterior plane

In table 1, we notice that in the coxofemoral mobility test in the anteroposterior plane, in the initial test the group recorded an average of 8.41, and in the final one a higher average of 9.91, the value of "t " being 5.745, which represents a statistically significant difference at a significance threshold of $p<0.005$.

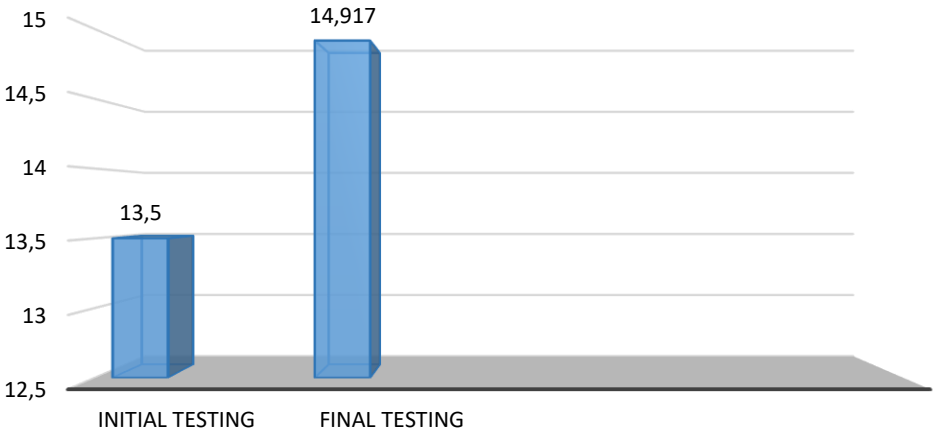

Figure 2. Results recorded in the coxofemoral mobility test in the frontal plane

For coxofemoral mobility in the frontal plane, the subjects at the initial test had an average of 13.5, and at the final test an average of 14.91, with a t-value of 6.189, which represents a statistically significant difference at a significance threshold of p<0.0005.

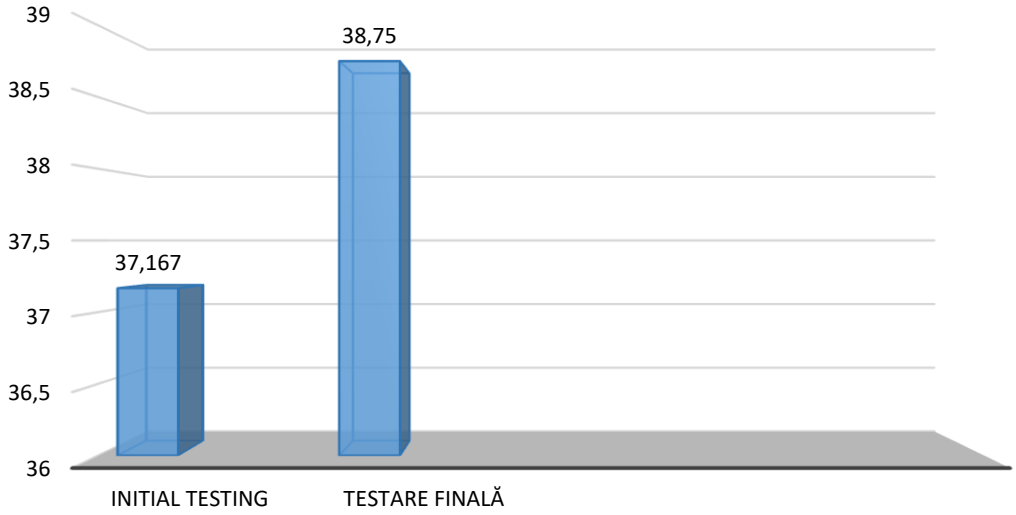

Figure 3. Results recorded in the 4 m lateral displacement test

In the 4 m lateral displacement test, we note that the average performance of the initial testing was 37.167, and the average performance at the final testing was 38.71. The value of "t" being 8.204, which represents a statistically significant difference at a threshold of significance of p<0.0005.

Discussions

The three terms mobility, suppleness, and flexibility can be considered synonymous, although the concept of mobility refers to the joint surfaces as a source of range of motion, whereas flexibility refers to the elastic quality of muscle fibers, ligaments, and tendons. Flexibility reaches its maximum values around the age of 15-16, and at the level of some joints or movements even later. After this age, especially under conditions of non-exercise, suppleness gradually decreases. The argument that children 's flexibility is of greater value does not make much sense. Certainly, childhood is the most effective for developing this quality. Flexibility develops best between the ages of 10 and 13 (both boys and girls), and flexibility education is almost twice as effective at this age as at older ages. The most current and conclusive literature states that some form of pre-active stretching involving sport-specific movements should be incorporated as part of a warm-up to achieve an optimal exercise response. This is further evidenced by the fact that this specific stretching modality, often called dynamic stretching (DS), tends to lead to significant improvements in power, jumping ability, sprint time, and agility. On the other hand, a more traditional mode of stretching, static stretching (SS), is often incorporated into a warm-up, but appears to decrease performance by the same measures (Knudson et al., 2001))(Holt et al., 2008) (Hough et al., 2009).

Conclusions

Following the research carried out in this study and the statistical-mathematical processing of the obtained results, the following conclusions can be drawn:

- The research was based on operational models specific to the education of suppleness, mobility, and stretching, diversified and adapted to age, and the level of training being accessible to volleyball players.
- The final values obtained in the researched group compared with those recorded in the initial tests, in all the motor parameters tested, confirm the hypothesis of the work, obtaining obvious progress in the education of suppleness.
- The operational models carried out in frontal work also had effects on the personality of the players, orienting their behavior toward collaboration, forming an ethical outfit disciplined by fairness, and developing the spirit of the outfit and the team.
- The use of these stretching programs in a systematic and rational way in the training of volleyball players led both to the improvement of joint mobility and muscle suppleness and to an increase in the performance capacity of these athletes.
- The introduction of stretching exercises in the form of complexes in training programs ensures the constant presence of most players on the field, preventing possible unavailability and reducing recurring muscle and joint injuries.

- The introduction in the training process of suppleness education exercises, a motor quality not specific to volleyball, ensures the ability of players to effectively utilize the acquired technique by solving tactical tasks on the field and gives the game fluency, accuracy, and spectacularity.

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