

STUDY ON THE ROLE AND BENEFITS OF USING WATER EXERCISES IN THE TRAINING OF JUNIOR BASKETBALL PLAYERS

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Abstract: *The current basketball game requires a multilateral and specific physical training at a higher level, adapted to the particularities of the age. It is known that the aquatic environment offers a number of opportunities due to the properties of water. The innovative use of water resistance and buoyancy to practice various sports activities with low impact on the body and addressing the relationship between physical training on land and aquatic activities are aspects that want to be investigated in this paper. The purpose of the study is to analyze the opinions of coaches and the specialists on the role and benefits of using water exercises in the training of junior basketball players. The questionnaire-type survey, applied to the 54 coaches, was used in order to be able to obtain in a short time a large volume of information related to the opportunity of introducing aquatic means in the training of basketball juniors.*

Key words: *basketball, juniors, physical training, aquatic environment*

1. Introduction

In sports, “the purpose of physical condition or physical form is to resist fatigue, the number one enemy of athletes or to overcome it” emphasizes the author Bompa T.O [2].

In modern basketball, the current game requires “a multilateral and specific physical training at a high level, adapted to the particularities of the respective age, the level of training of the athletes and the development trends of the game worldwide”[4].

The author Popescu F. (2004) considers that “physical training ensures the energetic background of performance, stimulating the increase of functional and morphological indices (strengthening joints, ligaments, muscle development and more correctly, its preparation for mechanical work) and, consequently, motor qualities, so the increase of the general effort capacity of the organism, which will allow the highlighting of the technical-tactical baggage provided by the competition regulations in which the athlete specializes.”[8]

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Although basketball is a team sport, the training must take into account the individual physiological, biometric features, the system of technical and tactical knowledge as well as the psychological features of the players "[7]

In the training of junior basketball players at this stage, in addition to learning the correct technical and tactical procedures and improving motor skills, it is recommended by specialists to focus on the training process and on the harmonious development with a special focus on the athlete's posture and attention to functional disorders that may occur during this period.

According to the author Dragan I. "characteristic for the basketball game there are the multiple jumps on the panel, the one that demands a lot of the knee joints; also, twists, sudden stops, sprints, require equally the joints of the knees and ankles. The demand for the locomotor system is asymmetrical in basketball" [3].

Author Horobeanu C. [5] appreciates that „practicing sports activities from an early age has many benefits, but also involves an increased risk of injury”. The young athlete may be vulnerable to injury due to physical and physiological changes specific to this growing period. During puberty, the factors that increase the risk of injuries are the processes of growth and maturation, especially if the body is subjected to an increased volume of physical training. Due to the fact that the growth process is not linear and uniform, different parts of the body are vulnerable at different ages. The staff involved in the training of young athletes (children's and junior teams) must be aware of their increased vulnerability and associated risks and adapt the volume of sports

training [5].

"The creative use of water resistance and buoyancy to practice a low-impact activity, which combines entertainment with efficiency, are suitable for all ages and levels of training" says the author Adami RM (2004, p. 8), "improves all components of fitness: endurance and muscle strength, body mass composition, aerobic capacity, flexibility and joint mobility, influencing over time and neuromuscular coordination "[1]

The author Mandache R.Ş [6] in his doctoral thesis claims that, "the effects of aquatic activities are reflected on man both motor and mental as well as functional and aesthetic" [6].

According to the way of organizing the activity, this research is a conclusion.

2. Methods used were bibliographic method, questionnaire method, data analysis and interpretation method, graphic method.

The questions from the questionnaire survey related to some needs currently existing in the basketball, which start from the place and role of physical condition and how to implement it in training, as well as the means of development at maximum parameters in training, respecting the specifics of puberty.

The questions in the proposed questionnaire were more numerous (20 items), eliminating those that are not the subject of this research. They tried to address different topics of the training process, ways to prepare the training, to find personal philosophies and ways of training, opinions on new methods of training juniors, but also questions about the usefulness of introducing aquatic activities, in the training of athletes.

The questionnaire was applied and distributed electronically to a number of 54 coaches and specialists in the field of this sport from basketball sports clubs across the country, with extensive experience, aged between 24-78 years. Respondents had the opportunity to select one or more answers from the questionnaire.

The data obtained from the application of the questionnaire were analyzed and statistically processed and we presented them through graphs. Following the results obtained, conclusions were formulated.

3. Results

To the question with no. 9 "What part of the body do you train regularly?" , over half of the 31 respondents stated that their first option is to develop the lower limbs, only 12 coaches are interested as the first option for developing abdominal muscles and 11 of the respondents chose as the first option to train the upper limbs at this age. It should be mentioned that no coach had as a first option the development of the back muscles.

Regarding their second option for training muscle groups, to develop the upper limbs are first 19 trainers, then to develop the abdominal muscles 14 trainers, to develop the lower limbs 12 and finally to develop the back muscles 9 options.

Coaches' opinions on the issue of accidents suffered by junior athletes at this age are apparent from the answers received to question 10. Only 9.3% of respondents consider that sometimes accidents are a problem in sports, while 48.1% consider that accidents are always a big problem in sports.

From the answers given by the coaches responding to the question with no. 11 we could analyze what could be the main causes of accidents in the basketball game

at junior level. From the coaches' perspective, the main cause would be poor physical condition and fatigue, in second place would be insufficient and undivided warm-up, and poor recovery would be the third cause, followed by hard contact between players, competitive schedule, muscle and joint stiffness, environmental conditions and training, and the last places would be defective technique and bad luck.

To the question with no.12 „How can the number (or severity) of sports injuries be reduced?“ of the 10 answer options as follows: better physical training, longer recovery, preventive measures (stretching, swimming, water gymnastics, sauna, massage), stricter refereeing, fewer matches, changing the rules of the game, physiotherapy, exams, medical investigations (medical screenings), protective equipment, high-performance gyms, other measures, the respondents stopped as the first option to answer only 4 measures. They consider that reducing the number (or severity) of sports injuries can be achieved primarily through better physical training 35, the second method of reducing no. of accidents in the option of specialists can be done by introducing preventive measures such as: stretching, swimming, water gymnastics, sunbathing, massage. Only 4 respondents believe that a longer recovery would help.

To the question with no. 13 on the knowledge of coaches regarding the benefits of practicing water exercises on the body, it was found that a very large number of coaches 90.7% know what they are and only 9.3% said they do not know.

The appreciation of the 54 coaches regarding the positive contribution brought by the practice of aquatic activities in the development of physical condition in basketball is found in their answers to question no. 14 (figure 1).

- 63% of respondents appreciate that practicing aquatic activities (swimming, aquagym aquatic plyometrics, aqua circuit, water games, etc.) have a positive contribution to the respiratory system (increases the capacity of the lungs);
 - 61.1% consider that by practicing aquatic activities it can lead to faster healing or recovery in case of certain traumas and diseases making the recovery process more pleasant, easier and faster;
 - 57.4% of trainers believe that practicing aquatic activities brings benefits to the muscular, skeletal and ligament system (training muscles with minimal impact on bones, increasing flexibility);
 - 50% of respondents appreciate that the benefits affect the cardiovascular system;
 - 46.3% consider that by practicing aquatic activities it can lead to improved posture (helps to correct posture and significantly reduces back pain);
 - 25.9% of respondents appreciate that practicing aquatic activities has effects on the nervous system (strengthens the psyche by decreasing the frequency of stress, anxiety and by swimming the body relaxes, induces a state of calm and balance).
 - 16.7% specify the beneficial effects on the immune system;
- Over half of the respondents, 57.4% believe that all the benefits listed above make a positive contribution to the development of fitness in basketball.

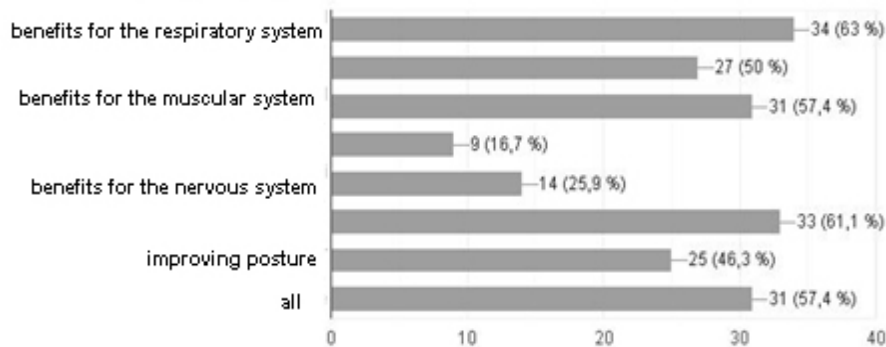


Fig. 1. *Coaches' assessment of the benefits of water activities that make a positive contribution to the development of fitness in basketball*

The responding specialists consider in an extremely large number (51 of the 54) in 94.4% (figure 2) that by the systematic practice of some aquatic activities it is possible to improve the physical condition of the junior athletes. Only 3 coaches did not agree 5.6%. This aspect was removed from the answers of the coaches to the question with no. 15.

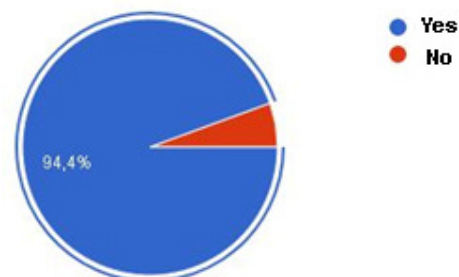


Fig. 2. *The appreciation of the coaches regarding the improvement of the physical condition of the athletes through the systematic practice of the aquatic activities*

To the question with no. 16 "Which of the muscle groups developed by swimming and water activities would help junior athletes in the sport?" the 54 coaches responded as follows (figure 3):

- back and shoulder muscles and expressed 33.3% opinion;
- arm muscles 27.8%;
- abdominal 20.4%
- pectorals 18.5%
- thighs 16.7%
- legs 14.8%
- 81.5% of respondents believe that all the muscle groups listed above would help junior basketball athletes.

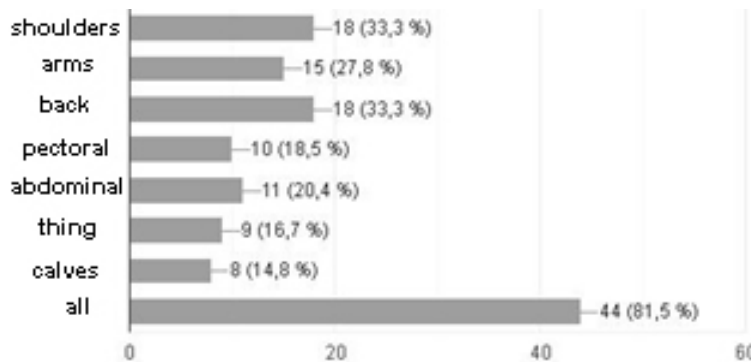


Fig. 3. *The opinion of the coaches regarding the muscle groups developed by practicing aquatic activities that would help the junior basketball athletes*

The opinions of the coaches regarding the development of relaxation through the use of water plyometry exercises without putting pressure on the joints in junior athletes (puberty period) can be found in their answers to the question no. 17 (figure 4).

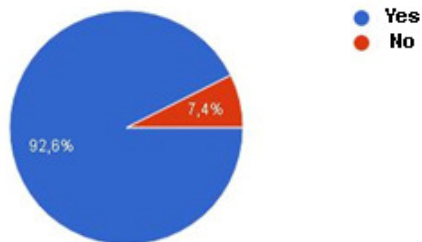


Fig. 4. *Coaches' assessment of agreement / disagreement with the mention that aquatic plyometry exercises can lead to the development of relaxation without putting pressure on the joints in junior athletes*

50 respondents 92.6% agree that aquatic plyometry exercises can lead to the

development of relaxation without putting pressure on the joints in junior athletes (puberty) while 7.4% (4) do not agree with this aspect.

To the question number 18 the respondents were asked to express their agreement or disagreement regarding the fact that by practicing the exercises of aquatic gymnastics and swimming, it can lead to the strengthening of the back muscles and the correction of postures of junior athletes (puberty). Of the 54 specialists, only one disagreed with 1.9%, while the remaining 53 respondents agreed with 98.1%.

In a very high percentage, 90.7% of the responding specialists support the idea that the introduction of aquatic activities (swimming, aquatic plyometrics, etc.) in the junior training program, by diversifying the environment, can reduce stressors and a mental balance. better in junior athletes. Only 5 coaches 9.3% do not agree with this idea. This analysis was

removed from the answers given to question no. 19.

To the last question no. 20 coaches were asked to agree or disagree with the introduction of swimming sessions and water activities in the training program for junior basketball players. To my surprise only 3 coaches (5.6%) did not agree with this idea while 51 (94, 4%) of them were positive and receptive to this idea.

4. Discussions and Conclusions

Analyzing the answers given to the questionnaire survey applied to the 54 coaches and specialists, the following conclusions can be drawn:

- the development of the lower limbs is considered a priority at this age, and 92.6% of coaches claim that aquatic plyometric exercises can lead to the development of relaxation without putting pressure on the joints;
- over 90% of respondents claim that accidents are a big problem at this age and that the main cause would be poor physical condition;
- many coaches know the benefits of practicing water exercises (90.7%) and claim in a percentage of 94.4% that, through the systematic practice of water activities can improve the physical condition of junior athletes;
- also in a high percentage of 98,1%, the respondents agreed that practicing water gymnastics and swimming exercises, can lead to strengthening the back muscles and correcting the postures of junior athletes (puberty) but will also see and positive influences on the mental state of athletes;
- it was surprising that a large number of coaches (5 coaches, 94.4%) would agree to include in the training program of junior basketball players swimming sessions and water activities.

In conclusion, we can say that following the answers given by the 54 specialists, extremely useful and motivating information was obtained to use water exercises in the training process of junior basketball players II, but we will report them permanently to the aspects theoretical findings in the literature analyzed.

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