

PSYCHOLOGICAL, MORPHOFUNCTIONAL AND COORDINATIONAL CHARACTERISTICS OF MOTOR SKILLS AND THEIR REQUIREMENTS FOR VOLLEYBALL PREPARATION IN WITH STUDENTS FROM 12-13 YEARS

(Professional paper)

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Abstract

The dynamics of changes in the body structure of adolescents (11-14 years) directly affects the physical skills, while they in return affect the physical fitness. The growth of individual mobility skills, i.e. sensitive periods, has different intensities during the development of children. This means that different qualities reach their maximum development at different age or heterochronicity. Volleyball is characterized by increased demands on speed capabilities - the ability to perform at high speed technical details and ways of keeping the game; certain actions or movements on playing field for a minimum of time. Volleyball is characterized by increased demands on speed capabilities - the ability to perform at high speed technical details and ways of keeping the game; certain actions or movements on playing field for a minimum of time.

Keywords: *motor abilities, motor coordination, physical endurance, muscular force, motor adaptation, volleyball*

“A modern education system must emphasize on the issue of physical activity of students” (V Hristova, 2001).

The volleyball game is characterized by a complex of motor skills in a special way as fast and jerky movements of short distances with frequent change of direction and explosive power spikes. Directly, they are related to controlled use of the technical skills. Milenska (1991) examined the embodiment of motor the habits in parallel with the development of motor skills. Scientific work on the issue have yet the authors Doncheva (2007) and Dimitrova (1992). A crucial problem in the theory of physical education is the examining of motor skills in dependence of human's age.

The dynamics of changes in the body structure of adolescents (11-14 years) directly affects the physical skills, and they in turn affects the physical fitness. What and how to use the power of puberty has been studied by Bahchevanov and Zh. Zhelyazkov (1991). “Children have soft plastic joints, suitable for stretching and developing of flexibility. According to them, because of imperfection of the body's functions, the children have low threshold of tiredness, low endurance, especially occurring in monotonous activities. By contrast, the recovery does take place very quickly.” A characteristic feature of neural activity is increased liability and fre-

quency impulses externally expressed through impulsivity and sharpness of movement. In connection with this features, their speed - power capabilities have relatively high values. Work process for developing of motor skills should be primarily aimed at developing speed by frequency; of spring by impulse; of throwing ability by rapidness of movement” (Bahchevanov and Zhelyazkov, 1991).

The development of motor skills in adolescents must be consistent with changes occurring in their body and their potential opportunities (Alipieva, 1986; Rachev, 1983; Doncheva, 2007; Dimitrova, 1992; Mavrudieva, 2009; Milenska, 1991).

The growth of individual mobility skills, i.e. sensitive periods have different intensities during the development of children. This means that different qualities reach their maximum development at the different age - heterochronicity.

In the age period that we are studying, (11-14 years), it reaches a maximum frequency of movements, while in the same time development opportunities for coordination ends (Rachev, 1983). During the puberty period the endurance capabilities continuously increases, but the muscle strength reaches its maximum of the capacity. “Periods of rapid development of motor skills continue during throughout almost all junior high school

stage of primary school education” (Hristova, 2001). But it is in this age of puberty when the foundations of the physical fitness by parallel improvement of all systems of the body are developed.

The sports teachers knowing the peculiarities of the young developing organism, they should help and positively affect the optimization of physical training of the students (Rachev, 1983).

Rapidity is the ability and skill of the human to conduct movements with the highest speed or the shortest time. There are several forms:

- Latent time for motor response;
- Speed of movement unit;
- Maximum frequency of movements;
- Ability to rapid start of movement.

The speed depends on the mobility of nerve processes, the functional status of analysts, strength and elasticity of muscles. Age development of the speed reaches the highest values at the tenth year, then decreases and after 15-16 year there is again a minor increase. “Obviously the age period from 9 to 12 years is most favorable for the development of the speed” (Rachev, 1983).

Volleyball is characterized by increased demands on speed capabilities - the ability to perform at high speed technical details and ways of keeping the game; certain actions or movements on playing field for a minimum time. In sports games, respectively, in volleyball as a form of speed is also taken the “speed of thought” - a top speed of operational thinking about the option of action in certain situations (Bachvarov, 2002; Doncheva, 2007). It has been shown that man made faster movements with hands than with their feet while Dimitrova (1992) found that the most rapid movements are made with wrists and fingers.

Kadiyski (1999) states that “the methodology for development of speed should provide targeted work to improve the nerve supply and coordination of movements performed at high speed.” Muscle strength is the ability, quality of human affect or counteracts physical objects from the external environment, through muscle contractions, delivered through a system of levers in the body. Without its manifestations it is impossible to implement any physical exercise depending on the condition of the central nervous system, the cross section of muscles and their level of fatigue, as well on the activity of the endocrine glands.

Manifestation of power in human movement has many varieties that have specific features. According Bachvarov (2002), “if a review of concepts related to the manifestation of power taht become popular in sports practice is made, it will become clear that these concepts have around thirty varieties.

Muscle strength has steadily upward development throughout the school age period. During the period of puberty it reaches the highest values. Advantageous functional and biological changes that accompany the “difficult” age explain the intensive growth of the muscle strength:

- For girls around age of 14-15 years;
- For boys around age of 11-12 years.

The main task of the sports teacher is to direct the work of force, i.e. to apply the exercises for those muscle groups that take most of the load. Exercise with adolescents should have an emotional character and variety. Studies of Rachev (1983) show that dynamic exercises are more effective for increasing the strength in adolescents.

Endurance is the ability, quality of human to conduct and to drive durable physical activity without reducing of its effectiveness, i.e. without decreased performance. Resilience is the ability to resist the fatigue.

Endurance can be general and specific, speed, power and speed – power endurance. It depends mostly on the functional condition of the cardiovascular system and the respiratory health of individuals, on the performance of the movements, the motivation, the attitude and the emotional stability. Endurance of teenagers is growing by 15-17 years, after which growth decreased in boys and girls by smaller ranges (Rachev, 1983.). The age dynamics of endurance is a continuous and comparatively steady process.

Volleyball is a game that brings high demands toward the endurance, especially toward endurance of jumping (Dimitrova, 1992), as most movements are performed in unsupported phase. Notwithstanding changes in game rules, volleyball matches last about two hours and not infrequently more, which puts contestants to the requirement for a high degree of general and specific endurance to maintain the effectiveness of their technical skills with fast, sharp and permanent changing game situations.

Flexibility is the ability to perform movements with a magnitude depending on the nature of the activity. Its manifestation is specific to each sport or a specific case (Doncheva, 2007). Flexibility is the maximum amplitude of movement, measured in linear or angular values.

Flexibility can be general and also specific (depending on the nature of the motor activity), as well as static and dynamic (depending on the muscle tension), active and passive (depending on whether the activity is performed alone or with assistance), which depends on the anatomical features (joints, ligaments and tendons construction), the elasticity of muscles, as well as on the temperature of the external environment (Dasheva & Zhelyazkov, 2000). Flexibility is influenced by the gender, while within the girls is significantly higher than within the boys.

The development is ascending, but unequal throughout the school period. In boys the maximum intensity is about 8-9 years and 13-15 years; for girls - 8-10 and 12-18 years (Rachev, 1983.).

In volleyball the main work is for flexibility in the shoulder, hip, knee and ankle joints, the mobility of the spine, primarily the work is: many reproduction of a single movement and individual determination of exercises;

Mineva (2004) confirms that the period of 11-14 years is most appropriate toward developing of the flexibility.

Flexibility requires systematic work. There is a rapid growth, but when trainings are ceased there is also rapid decline of the achievement (Dimitrova, 1992).

Agility is the ability, quality of people to coordinate the motor actions within the space, the time and effort of making adequate motor tasks.

Agility is complicated, complex skill, based on a number of underlying basic and special coordination abilities:

- Ability to coordinate in space;
- Ability to cinestatic differentiation;
- Ability to rhythm;
- Ability to time determining;
- Ability to react.

Agility is evident in two key areas that are integral criteria of quality (Dasheva, & Zhelyazkov, 2000).

- Ability to acquire motor actions;
- Ability to convert already learned motor actions

(motor adaptation).

In addition, specific measures were accuracy (adequate and appropriate), speed (for short time), rationality (economic) and resourcefulness (improvisation).

Agility is largely innate quality, but in the work process can be significantly improved. Agility depends on the motor experience and it identifies a set of the motor skills.

There is following aspects regarding the age quality aspect dynamics:

- Up to 15-16 years to develop the first objective - to acquire motor actions;
- After 15 - years to develop the second strand - motor adaptation.

Factors that affect are genetic, spontaneous influence of the environment, equipment and methods of exercise.

Agility is important prerequisite for learning and improvement of sports techniques. It is extremely important for sports requiring of a high degree of coordination, as is the case of volleyball. The level of agility (spatial - temporal coordination) depends on the relationship between the visual, vestibular, tactile, proprioceptive and the motor analyzer.

“The development of the motional analyzer as well as automation of motor skills, i.e. motor habit, promote the faster reaction in abruptly changing situations in the game” (Dimitrova, 1992).

Volleyball is characterized by increased demands on speed capabilities - the ability to perform at high speed technical details and ways of keeping the game; certain actions or movements on playing field for a minimum time. Motor skills and habits are the main tool for achieving this task. Thus, they are crucial to the complex development of children as individuals and took an important role in complete learning process.

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