

The Role of Strength Skills in the Development of Jumping in Young Volleyball Players

Aminov Dilshod Najimovich

Master student, Pedagogical Institute of Bukhara State University, Uzbekistan

Abstract:

In recent years, radical changes in the rules of volleyball have given a completely new look to the performance of game activities and game skills. Nowadays, almost all game skills are performed "in the air" in most situations (jumping, blocking, entering, passing, receiving the ball, falling). The emergence of this situation not only increases the focus on the qualities of jumping and jumping in volleyball practice, but also requires the creation of new scientific technologies aimed at the rapid development of these qualities. The article discusses the relevance and necessity of developing jumping in modern volleyball, definitions of the concept of jumping, and the role of strength skills in the development of jumping in young volleyball players.

Keywords: Volleyball, jumping, movement games, strength, ability, game skills.

I. Introduction.

One of the main physical qualities for volleyball players is jumping. Jumping is one of the qualities of speed and strength, characterized by a strong contraction of the leg muscles in a short period of time. It is this high level of quality that allows relatively short players to compete with tall players and to effectively perform basic game skills (kicking and blocking).

The best age to develop jumping is 10-11 years old. During this period, young volleyball players jump from a height to 12.5 cm.

There are many types of jump quality. For example, running with both feet or standing up, jumping vertically with one foot, jumping vertically or longitudinally, jumping with both feet, long jump, and so on. Each type of jump has its own purpose and purposeful technique. Athletes who play volleyball, basketball, football, and other sports have different jumps. It should be noted that even in a sport, such as volleyball, the nature of the jumps performed to strike or block, score or pass the ball is not the same. It is also worth noting that there is only one skill of the game - the ability to jump, depending on the type of shot (short or high kick). Consequently, the concept of jumping or jump endurance has a multifaceted content, essence, feature and meaning. So, when it comes to developing these qualities, it is very important to pay special attention to the specific type of jump and its appropriate exercises.

II. Discussion and results

Power abilities, their manifestation occurs as a result of the influence of the organism, which is based on the qualities of mental, muscular, motor, vegetative, hormonal functions and other physiological systems of the body. As a result, strength abilities do not depend on the simplified concept of "muscle strength", as this would only be a mechanical description of their contractile properties. Muscle strength is an evolving component of every movement action. It can have a quality characteristic depending on the speed, external resistance and duration of the work.

Muscle strength, as an indicator of a person's physical capacity, is the ability to overcome or resist external resistance due to muscle tension.

When developing strength skills in an active sport, it is important to keep in mind that the effectiveness of training depends on the maximum amount of energy expended and the time it takes. The use of training tension in the development of strength skills can be based on the manifestation of a variety of possibilities: one-time, reversible, periodic or non-periodic work; against small or large external resistance; fast or slow pace of exercise; different initial states of muscle - from relaxed or tense.

One of the most important aspects that determine muscle strength is the way these muscles work. Muscle strength can be demonstrated during movement:

when reducing its length (overcoming, i.e., a myometric procedure, such as lifting a barbell while lying down);

in its elongation (sideways, i.e., pliometric mode, such as sitting with a barbell on the shoulder or chest);

without changing the length (holding, ie isometric order, for example, holding dumbbells in outstretched arms bent for 4-6 s);

changes in length and muscle tension (mixed, i.e., an auxotonic procedure, such as climbing on rings, stretching arms with stretches ("cross"), and holding "cross").

The first two are dynamic, the third is static, and the fourth is statodynamic. These modes of muscle work are defined by the terms 'dynamic force' and 'static force'.

The maximum magnitude of the force is reflected in the adjustable performance, in some cases twice the isometric value.

Strength can be achieved slowly and quickly in any muscle exercise regimen. This is a description of their performance. In the adaptive mode, the force exerted in different movements depends on the speed of movement, and the greater the speed, the greater the force.

Under isometric conditions, the force is zero. The force in this is much less than the magnitude of the force in the pliometric order. Muscles develop less force over static and adaptive modes. As the speed of movement increases, the magnitude of the force decreases.

In slow motion, ie when the speed is close to zero, in isometric conditions the magnitude of the force does not differ from the force.

Occasionally there is a tendency for the isometric workout to forcefully lengthen the length of the muscles during side movements. This is the case, for example, when jumping from a high altitude during the amortization phase, as well as other jumps that require the release of the kinetic energy of the falling body.

In the case of forcible extension of the length of the muscles in the lateral mode, the force is much greater (1.5-2) than in the isometric mode of operation.

The ability to show muscle strength in the conquering mode is less than in the isometric and adaptive modes. It is important to remember. the higher the rate of muscle contraction, the less pronounced and vice versa is the inversely proportional relationship between the apparent force and the force of muscle contraction.

Strength development technology should take into account the specifics of the relationship between maximum force and weights in isometric conditions and strength and speed in exercises. There is a

rule - an unloaded muscle contracts at maximum speed. If the weight or resistance force gradually increases, the muscle strength increases according to the increase (regardless of the mass of the weight or the magnitude of the resistance), but only for a certain period of time. This condition occurs when the weight or resistance increases and the muscles that are working do not increase their strength.

An example is a rubber ball and an iron ball weighing 0.5-1 kg. The force exerted on a rubber ball is less than the force exerted on an iron ball. As the weight of the ball gradually increases, the force acting on the body does not depend on the weight of the ball, and there comes a time when it is determined by the degree of development of isometric force in the joints.

The isotonic mode of muscle function is characterized by the contraction of a muscle under the influence of a constant stress or external load. In this way, the lower the load, the faster the muscle contraction, or vice versa.

This procedure is specific to exercises for overcoming external resistance (dumbbells, barbells, weights, weights on block devices).

The peculiarity of isotonic exercises is that the magnitude of the force applied to the projectile varies along the trajectory.

When doing exercises with external weights, keep in mind that the maximum strengthening of the muscles in the head of the movement during high-speed dumbbells or barbell exercises gives the projectile speed. The next work is done mainly against the background of the inertia of the projectile. In this regard, skin exercises of this type of weight gain do not give the expected effect on the development of speed, dynamic strength. If these exercises are performed at a slow or moderate pace, as well as taking into account the amount of weight, the maximum strength and growth of muscle mass will develop effectively. In general, exercises with dumbbells and barbells are easy to perform because they are convenient for everyone, and are very useful for general physical development.

According to the given regimes and the nature of muscle activity, human strength abilities are divided into two types:

1. Personal strength abilities manifested in static and sluggish conditions.
2. Speed-power abilities, which are manifested in the performance of fast movements with a winning and giving side, or in the rapid transition from adaptive to winning.

A person's personal strength abilities are manifested in maintaining a normal weight for a certain period of time with maximum muscle strength (static nature of work) or in moving large weight objects.

In the latter case, speed is almost irrelevant, and the movements reach their maximum (the work is slow and dynamic in terms of sports terminology). Depending on the nature of the work, muscle strength can be static or slow dynamic. Speed-power skills are used when power is needed as well as speed.

In this case, the higher the external weight, the stronger the movement, and the lower the weight, the faster the movement. The manifestations of speed-strength abilities depend on the characteristics of the muscle strength in a given movement. This character is manifested in the increase of power in various movements, in its magnitude and speed of development.

Explosive power capability. An important type of speed-power ability is 'explosive' power. Explosive power is the ability to demonstrate high levels of power in a short period of time.

He is important in the start of sprinter running, shooting, boxing and other events. It turns out that a master of sports not only has a high level of strength, but most importantly, he achieves the maximum amount of strength in a very short time.

The components of explosive action are threefold and are determined by the following characteristics of neuromuscular activity:

Maximum muscle strength, the ability to quickly demonstrate external movement at the beginning of muscle strength (starting force), the ability to increase the working movement during the acceleration of the moving mass - the accelerating force. It turns out that these characteristics apply to everyone to one degree or another, regardless of their age, gender, sports, type of physical activity.

The level of development of "explosive" force can be determined using the speed-force index, calculated using the following formula:

$$J = F_{\max} / t_{\max},$$

Where: J is the speed-power index;

F max is the maximum force exerted on a given motion;

t max is the time to reach maximum power.

It is impossible to show power at once. It takes time for the muscles to show maximum strength. It was found that approximately 0.3 seconds after the start of the movement, the muscle exerts a maximum of 90% strength. However, in sports, there are many movements that take less than 0.3 seconds. For example, in the strongest sprinters, 100-60 ms for pre-race push-ups, 150 ms for long jump, 180 ms for fosbyuri-flop high jump, 200-180 ms for ski jumping, and about 150 ms for javelin throwing.

In this case, the person does not have time to show maximum strength. Therefore, it is not the magnitude of the force that is manifested, but its growth rate, that is, the gradient of force, that is the leading factor in the ability of the force.

This is evidenced by the fact that as athletes improve their skills, the time spent on javelin throwing, core pushing, running, and jumping is reduced.

Thus, an increase in maximum strength in speed-strength exercises may not lead to an improvement in the result. This means that athletes with low strength but high gradient performance can beat an opponent with greater strength potential.

Reactive power capability. Modern research has shown another manifestation of strength abilities, and the ability of muscles to store and use the energy of elastic deformation is called "reactive ability". This ability is characterized by the appearance of a strong movement after intense mechanical stretching of the muscles, that is, the rapid transition from adaptive work to the winner under conditions of maximum development of their dynamic load.

The initial stretching causes the muscles to flex flexibly, allowing them to accumulate a certain tensile potential (nonmetabolic energy).

It has been found that the sharper the muscle elongation during the amortization phase, the faster the muscles move from adaptive to overwork, and the higher their contractile strength and speed. Provides high savings results in running, jumping and other movements to maintain subsequent flexibility of the muscles.

For example, in volleyball, the time from transition to work to victory depends on the level of jumping. In the practice of social education, they also distinguish between absolute and relative muscle strength of a person.

For most exercises, relative strength is more important than absolute strength.

The development and manifestation of strength depends on many factors. First of all, they are affected by the size of the physical muscles. The thicker it is, the more likely it is that muscle movement will develop under equal conditions. In working hypertrophy of muscles, the number and size of myofibrils of muscle fibers increase, as well as the concentration of sarcoplasmic reticulum increases. This can increase the external volume of the muscles by a small amount, because, firstly, the density increases, and secondly, the layer of skin fat on the muscles being exercised decreases.

Human strength depends on the composition of muscle fibers. "Slow" and "fast" muscle fibers differ from each other. "Slow" muscle strength develops strength at three times less speed than fast fibers. "Fast" muscle strengthening mainly results in rapid and strong contractions. Strength training with high weights and low repetitions mobilizes "fast" muscle fibers. Low weight and high repetition exercises activate both "fast" and "slow" fibers.

III. Conclusion.

Prerequisites are a high potential base of force, but there is no certainty that it will work with all its might. When an athlete uses his or her potential strength for a specific purpose, the adaptation between the muscles is only realized if the movement is appropriate.

The difference between an athlete and a non-athlete is that they not only have a lot of muscles, but they also use their potential to achieve high results in the sport and achieve success.

References:

1. Аурпетыантс Л.Р., Пулатов А.А. Voleybol nazariyasi va uslubiyati. //Oliy o'quv yurtlari uchun darslik. T.: Fan va texnologiya, 2012. – 208 b.
2. Ураева Г. С. Инновации в начальной школе //Вопросы науки и образования. – 2020. – №. 7 (91).
3. Goncharova O.V. "Yosh sportchilarning jismoniy qobiliyatlarini rivojlantirish". T., O'zDJTI matbaa nashriyoti bo'limi, 2005 y. – 57 b.
4. Po'latov A.A. Voleybol. JTI talabalariga mo'ljallangan dastur. Ixtisoslik kursi. T., 1993. – B.15.
5. Urayeva D. S., Nurullayeva S. M. Expression of the realities and people of the war period through mythological images. ACADEMICIA: An International Multidisciplinary Research Journal. – 2020.
6. Ражабова Н. К. БЎЛАЖАК БОШЛАНҒИЧ СИНФ ЎҚИТУВЧИЛАРИ ТАДҚИҚОТЧИЛИК ФАОЛИЯТИНИ ТАКОМИЛЛАШТИРИШГА ТАЪСИР ЭТУВЧИ ОМИЛЛАР //БАРҚАРОРЛИК ВА ЕТАКЧИ ТАДҚИҚОТЛАР ОНЛАЙН ИЛМИЙ ЖУРНАЛИ. – 2022. – Т. 2. – №. 4. – С. 349-352.
7. Камиловна, Раджабова Нодирабегим; „FACTORS INCLUDING RESEARCH ACTIVITIES OF FUTURE PRIMARY SCHOOL TEACHERS,“НАУКА, ТЕХНОЛОГИИ, ОБРАЗОВАНИЕ: АКТУАЛЬНЫЕ ВОПРОСЫ, ДОСТИЖЕНИЯ И ИННОВАЦИИ“,4,1,119-121,2022.

8. Рустамова Г. ХАЛҚ ҚЎШИҚЛАРИДА АНОР ПОЭТИК ОБРАЗНИНГ БАДИИЙ ИФОДАСИ //Научно-практическая конференция. – 2022.
9. Radzabova N. K. IMPROVING THE RESEARCH ACTIVITY OF FUTURE PRIMARY SCHOOL TEACHERS AS A SOCIAL PEDAGOGICAL NEED //ОБРАЗОВАНИЕ, ВОСПИТАНИЕ И ОБУЧЕНИЕ В СООТВЕТСТВИИ С ФГОС: АКТУАЛЬНЫЕ ВОПРОСЫ, ДОСТИЖЕНИЯ И ИННОВАЦИИ. – 2022. – С. 79-81.
10. Komilovna R. N. METHODS AND TOOLS OF EDUCATIONAL TECHNOLOGIES IN THE FORMATION OF THE CONCEPT OF FIGURE FACE IN STUDENTS. – 2021.
11. Шербекова Г. Я. АФСОНА ВА РИВОЯТЛАРДА “ҲАЁТ ДАРАХТИ” ОБРАЗИ ИФОДАЛАНИШИГА ОИД АЙРИМ МУЛОҲАЗАЛАР //Scientific progress. – 2022. – Т. 3. – №. 2. – С. 244-250.
12. Rajabova N.K. coaching approach at a mathematics lesson in grade 3 in the educational structure "equal partner" //AJMR. Vol 10, Issue 1, January, 2021.